# THE PLANT DISEASE REPORTER

Issued By

CROPS RESEARCH DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

Volume 43

Number 13

(Index Number)
Issued February 15, 1960



The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Crops Research Division serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

# THE RESERVE THE PARTY OF THE PA

of bound

TOURS IN TOUR SEED STORY

AGRICULTURAL DESERVOR BLEVIOUS

CHARLES SO THE PARTIES OF THE COMME

# THE PLANT DISEASE REPORTER

### Issued by

# MYCOLOGY AND PLANT DISEASE REPORTING SECTION

#### INDEX TO VOLUME 43

## Prepared by Nellie W. Nance

Crops Research Division Volume 43 Plant Industry Station, Beltsville, Maryland Index Number

# AUTHOR INDEX

ADAMS, ROBERT E., 396
AFANASIEV, M. M., (1098)
AGENBROAD, OWEN, (131)
AKELEY, ROBERT, (198), (924)
ALCORN, STANLEY M., (1038)
ALEXANDER, LEONARD J., 55, (298)
ALLEN, ROSS M., (67), (309)
ALLEN, W. R., (380)
ANDERSEN, A. H., 1122
ANDREWS, E. A., 418
ARK, PETER A., 72, 79, 272, 276
ARMSTRONG, G. M., (509)
ARMSTRONG, J. K., 509
ATKINS, I. M., (165), (772)
ATKINS, J. G., (33)
AYCOCK, ROBERT, 283

BAGGETT, JAMES R., 137 BAILEY, W. K., (360) BAIN, DOUGLAS C., 318 BAINES, R. C., (1174) BAKER, KENNETH F., 1032 BAKER, RALPH, (1024), (1209) BALTER, JERRY, (1143) BARHAM, W. S., (570) BARKSDALE, T. H., (380) BARNES, GEORGE L., 487 BEIER, ROBERT D., 477 BELL, MILTON R., (272) BENNETT, C. W., 1188 BERAHA, L., (1031) BILBRUCK, JAMES D., 936 BINDER, EUGENE, 972 BIRCHFIELD, WRAY, 41 BIRD, L. S., 86 BOLICK, JOSEPH H., 511 BONDE, REINER, (51), 198, (201), 924 BOOTH, JOHN A., 1038 BOOTHROYD, C. W., (446) BORDERS, HUEY I., 549 BORLAUG, N. E., (500) BOSWELL, S. B., (797) BOWERY, T. G., (903) BOYCE, JOHN S., Jr., 420 BRANDES, GORDON A., 201 BRANN, J. L., (719) BRASE, K. D., 157, (380) BRAVERMAN, SAMUEL W., 1050

BREECE, JAMES R., 989
BRENTZEL, W. E., (169)
BRIDGMON, G. H., 163
BRIERLEY, PHILIP, 685
BRINKERHOFF, L. A., (90)
BROMFIELD, K. R., (855), (1154), 1160
BROWN, H. E., (1132)
BROWNING, J. ARTIE, 172, 768
BROYLES, JAMES W., 18
BRUEHL, G. W., 471
BURKHOLDER, WALTER H., 934
BUSHONG, J. W., 1178
BUTLER, EDWARD E., 187

CALAVAN, E. C., 374, (528) CALDWELL, RALPH M., (762), (1052) CAMERON, J. W., (374) CAMPBELL, W. A., (806), (1148) CAMPBELL, W. P., 1266 CAPPELLINI, R. A., 177, 287 CÁRERO, MANUEL, (1198) CARGO, W., (633) CARPENTER, W. J., (745) CARTWRIGHT, W. B., (1052) CATION, DONALD, 394, (991) CETAS, R. C., (201) CHAMBERS, ALBERT Y., (981) CHANG, YET-OY, 437 CHATTOPADHYAY, S. B., 1241 CHIU, REN-JONG, (85), 690 CHRISTENSEN, CLYDE M., (764) CHRISTENSEN, J. J., (159) CLARK, O. F., (968) COFFMAN, FRANKLIN A., 772 COLE, JOHN R., 81, 658, 960 COLEMAN, OTTO H., (522) COOPER, W. E., (368), 903 COVEY, R. P., (1271), (1287) COWPERTHWAITE, W. G., (41) CROSIER, WILLARD F., 616, 1013 CROSSAN, D. F., 543, 732, (1153) CROZIER, J. A., Jr., 446 CUELLAR, ROGELIO, (1201) CULP, THOMAS W., (827) CUMMINS, GEORGE B., 411 CURL, E. A., 1245

DALY, E. J., (431)

DARLING, H. M., 239 DASGUPTA, C., (1241) DAUBENY, HUGH A., 1253 DAVEY, C. B., (404) DAVIDE, R. G., (872) DAVIDSON, ROSS W., 806, 1148 DAVIS, R. A., (213), (1231) DEAN, JACK L., 522 DEAN, LESLIE L., 131, 1108 DeVAY, J. E., (1124) DeWOLFE, T. A., (830), (833), (1169), (1174) DeZEEUW, D. J., 213 **DICKENS, L. E., 1263** DOOLITTLE, S. P., 1153 DROPKIN, VICTOR H., (311) DURAN, RUBEN, 880 DURBIN, RICHARD D., 922, (1191)

EARHART, R. W., 1184
EDWARD, J. C., 1191
EIDE, CARL J., (546)
EINSET, J., (264)
ELLETT, C. W., 835
ELLIOTT, EDWARD S., 461, (1282)
EPPS, JAMES M., 981
EPSTEIN, ABRAHAM H., 1078, 1195
ERWIN, D. C., 558

FELDMAN, J. M., (421), (422) FELDMESSER, JULIUS, 261 FENNE, S. B., (155), 1264 FERRER, JUAN B., (1201) FEZER, KARL D., 1287 FIELDING, M. J., (33) FINLEY, A. M., (626), 629 FISCHER, GEORGE W., 172, (880) FISHER, R. W., 878 FLANGAS, A. L., (1239) FOOTE, F. J., (797) FORD, R. E., (352) FORSYTH, F. R., 5, (556) FRAZIER, NORMAN W., 645 FRAZIER, W. A., (137) FREISEN, H. A., (1266) FREY, K. J., (768) FRIDAY, JAMES, (394) FRIDLUND, PAUL R., 594, 993 FULTON, ROBERT H., 270, 991 FUTRELL, M. C., 165, 772, 1198

GALINDO A., JORGE, (500)
GALLI, FERDINANDO, 66
GALLUN, R. L., (1052)
GARBER, M. J., (558)
GARBER, R. H., (584)
GARREN, KENNETH H., 665, 759
GASKIN, T. A., 24
GERDEMANN, J. W., (403), (1178)
GILLESPIE, W. H., 588
GILMER, R. M., (157), 264
GILL, D. L., 1274
GOLDEN, A. MORGAN, 979, 1103, 1196, 1258

GOOD, J. M., 236, (444), 1099 GOODE, M. J., (570) GOTH, R. W., (898) GOUGH, F. J., 169 GOULD, CHARLES J., 491 GRAHAM, DONALD P., 594 GRAHAM, J. H., 1114 GRANT, T. J., 1277 GRANTHAM, J. T., (1120) GREEN, J. G., 172 GREEN, RALPH J., Jr., 814 GRIMM, G. R., (1277) GRISSINGER, E. H., (1160) GROGAN, C. O., (1124), 1132 GUENGERICH, H. W., (1095) GUNKEL, W. W., (111), (719) GUTHRIE, JAMES W., 423 GUYER, G. E., (213)

HAGLUND, W. A., 787 HALISKY, P. M., 584, 1084 HALL, WILLIAM E., 175 HANNAH, A. E., (849) HANSON, EARLE W., 782 HARDING, PAUL R., Jr., 649, 893, 962 HARDISON, JOHN R., (619) HARE, W. W., 152 HARRISON, M. D., (418) HART, W. H., (989) HARTLEY, CARL, 360 HARTWIG, EDGAR E., 504, (946) HARVEY, JOHN M., 889 HAWKSWORTH, FRANK G., 109 HAYSLIP, NORMAN C., 818 HEAD, ERNEST E., (918) HEGGESTAD, HOWARD E., 682 HENDERSON, W. J., (1263) HENNEBERRY, T. J., (494) HENNEN, JOE F., 168 HENNING, ROBIN G., 298 HIBBEN, CRAIG R., 1137 HILDEBRAND, E. M., 712, 715, 1070 HOBBS, C. D., (772) HOCKEY, J. F., 804 HOLLIS, J. P., 33 HOOKER, A. L., 337 HOOKER, W. J., (633) HOPPE, PAUL E., 1053 HOPPER, BRUCE E., (47) HORN, N. L., (947) HORNE, L., (1120) HOUGAS, R. W., (144) HOUSTON, B. R., (1084) HSI, C. H., 595 HUBER, D. M., 626 HUTCHINSON, MARTIN T., 801, (972) HYCHE, L. L., (1245) HYRE, R. A., 51, 295

INMAN, R. E., 536 IVANOFF, S. S., 180

JACKSON, C. R., 98 JANICK, JULES, 413 JENKINS, LEE, 1095 JENKINS, S. F., (424) JENKINS, W. R., (791), (1231) JENSEN, HAROLD J., 253 JOHAM, H. E., (86) JOHNSON, BARBARA, (51) JOHNSON, HOWARD W., 1016, 1268 JOHNSON, LEANDER F., 1059 JOHNSON, W. H., (732) JOHNSTON, C. O., (159), (607), 998 JONES, J. P., (439) JONES, JOHN P., (659), 946 JORGENSEN, HANS, (184) JYLKKA, EDWARD W., (519)

KANTZES, J. G., 1231 KARLE, HARRY P., 520 KEENER, PAUL D., 287, 966 KENNEDY, B. W., 90 KILPATRICK, R. A., 1111 KING, CLAUDE L., 1256 KING, THOMAS H., (787) KINGSOLVER, C. H., (173), (601), (855), (1154, (1160))KLINGNER, A., (422) KLOTZ, L. J., 830, 833, (1169), 1174 KNUTSON, KENNETH, 546 KOBLE, ADAM F., 14 KOIKE, H., (253) KOLP, B. J., (163) KOMANETSKY, MICHAEL, (168) KRAMER, C. L., 511

LAHR, K. A., (165) LAMBERT, ROGER G., (1117) LAUTZ, W. H., 48 LAVIOLETTE, F. A., (334) LEACH, CHARLES M., 619, 622 LEAPHART, CHARLES D., 809 LEAR, BERT, 314, 459 LETT, LEONARD, (368) LEUKEL, R. W., (348) LEWIS, G. D., 1079 LIDER, L. A., (314) LIGHTLE, P. C., (1288) LINE, ROLAND F., (546) LINFORD, M. B., (323), 987 LOCKHART, C. L., 102 LOMBARD, FRANCES F., (1148) LORENTZ, PAUL, (685) LOWNSBERY, B. F., 913, 918 LUCAS, G. B., (152), (753) LUND, STEVE, (1122) LUTEY, R. W., 1287

MacCarthy, H. R., 115 Machacek, J. E., 343 Mack, G. L., (719) Maier, Charles R., 1027, 1048, (1063)

MALOY, OTIS C., 929 MANKAU, R., 968, 1230 MARLATT, ROBERT B., 67, 309, 741, 1019, 1075 MARSH, PAUL B., (1042) MARSHALL, N. L., (1245) MARTIN, J. P., (253) MARTIN, W. J., (947) MARTINEZ S., EUGENIO, (500) MARUZZELLA, JASPER C., 1143 MATKIN, O. A., (1032) MAUNG, M. O., 791 MAY, CURTIS, 496, 565, 955 McANELLY, CHARLES W., (437) McEWEN, F. L., (1219) McFARLANE, J. S., (1188) McGLOHON, NORMAN E., 22 McGREW, JOHN R., 385, 695 McKEEN, COLIN D., 729 McKINNEY, H. E., (448) McKINNEY, H. H., (471) McKITTRICK, ROBERT T., (67), (1073) McNAMEE, J. M., (41) McVEY, DONALD V., 403 MERRIAM, DONALD, (198), (924) MICHEL, L. J., (464), (1010) MILBRATH, J. A., 705 MILLER, JAMES D., 159 MILLER, LAWRENCE I., (353) MILLER, P. M., 646 MILLER, P. W., 401, 996, 1130, 1247 MILLER, PAUL R., 2 MILLIKAN, D. F., 82 MILLS, I. K., 1098 MINTON, NORMAN A., 47 MINZ, G., 1051 MITCHELL, J. W., 431 MITCHELL, JOHN T., (918) MOORE, E. LEON, (682) MOORE, J. N., (567) MOORE, P. W., (1169) MOREY, DARRELL D., 578 MORGAN, L. W., (70) MORGAN, O. D., 660, 755 MORRIS, R. C., (942) MORTON, DONALD J., 243, 248, (1073) MOSEMAN, JOHN G., 1000, 1004 MURAKISHI, HARRY H., 552 MYERS, RONALD F., 311

NATTI, JOHN J., 640, 735
NEELY, DAN, 498
NEWHALL, A. G., 111
NEWTON, R. C., (1114)
NICKESON, R. L., (133)
NIEDERHAUSER, J. S., (500)
NIXON, R. R., (1120)
NORMAN, G. G., 1120
NORMAN, PAUL, (1277)
NORTON, DON C., 227
NYLAND, GEORGE, (106), (520)

ORELLANA, R. G., 363 ORILLO, F. T., (562) OSTAZESKI, STANLEY A., 350

PADY, S. M., 159, 607 PALMER, JOHN G., 494, (496), (565), (955)PALTI, J., 221 PANZER, JAMES D., 133, (477), 697, 845 PAPAVIZAS, G. C., 404 PARKER, K. G., 380 PATINO, GRACIANO, (698) PAVGI, M. S., 1239 PEET, CLYDE E., (855), (1154), (1160) PEPPER, EVAN H., 920 PETERSEN, L. J., 1204, 1209 PETERSON, CLARENCE J., Jr., 423 PETERSON, GLENN A., (14) PETERSON, ROGER S., (109), 1227 PETURSON, BJORN, (5), 556 PLAKIDAS, A. G., 668, 688 PON, D. S., 173 PONTIS, R. E., 421, 422 PORDESIMO, A. N., (562) PORTER, K. B., (165) POTTER, H. S., 633 POUCHER, C., (41) POWERS, H. R., Jr., 762 PRESTON, W. H., Jr., (431) PRIDHAM, T. G., (431) PROVVIDENTI, ROSARIO, 821, (1219) PURDY, LAURENCE H., 9

RAABE, ROBERT D., 1270 RACKHAM, ROBERT L., (970), 1023 RAEDER, J. M., (423) RAMSEY, G. B., 1031 RANKIN, HARVEY W., 70, 444 RATCLIFFE, T. J., (236) REBOIS, R. V., (261) REDDY, CHARLES S., 872 REED, J. P., (801) REYES, LUCAS, (1198) REYNOLDS, H. T., (558) RHOADES, HARLAN L., 323, (987) RICH, AVERY E., (201), 540 RICH, SAUL, 118, 834 RICHARDS, M. C., (540) RICHARDS, W. R., (849) RIGGS, R. D., (909) ROANE, C. W., (1000) ROBERTS, D. A., 352 ROGERS, MARLIN N., 1236 ROGERSON, C. T., (745) ROSEN, H. R., 172, 1176 ROSS, J. P., 1284

SAKSENA, H. K., 670 SALIBE, ARY A., 1081 SAMSON, R. W., (201) SASSER, J. N., (903) SAYRE, R. M., (439) SCHAFER, JOHN F., 1052 SCHIEBER, EUGENIO, 673 SCHLEDER, E. GORDON, 329 SCHMID, GUSTAV, 380 SCHMITT, C. G., (173), 601, (855) SCHNATHORST, W. C., (584) SCHNEIDER, C. L., 681 SCHREIBER, LAWRENCE R., 814 SCHROEDER, W. T., 719, (821), 1219 SCHUSTER, M. L., 27, 439 SCOTT, D. H., (385), (567), (1091) SHAFER, J. F., (762) SHAFER, THELMA, (1103), 1196, (1258) SHARP, E. L., 12 SHARPE, E. S., (431) SHAW, LUTHER, 753 SHER, S. A., 797 SHIH, S. C., 1282 SIEGEL, M. R., (732) SILL, WEBSTER H., Jr., 85, 690, 1256 SIMONS, JOHN N., 710 SIMONS, M. D., 464, 1010 SIMPSON, MARION E., 1042 SINCLAIR, J. B., 947, 949 SINGH, B. B., (670) SKIVER, R. E., (1204) SLYKHUIS, J. T., 849 SMALE, B. C., (431) SMART, GROVER C., Jr., 1212 SMELTZER, D. G., (1084) SMITH, A. L., (368) SMITH, D. T., (352) SMITH, HARLAN E., 368 SMITH, M. A., (1031) SOLEL, Z. (1051) SOOST, R. K., (374) SOWELL, GROVER, Jr., 193 SPRAGUE, RODERICK, 871 STACHWICK, G. T., (633) STAFFELDT, EUGENE E., 506, 1063, 1150 STALL, ROBERT E., 725, (818) STANDIFER, MARIE S., 983 STANWAY, V. M., (1132) STEELE, A. E., (236), (1099) STEMBRIDGE, GENE, 1091 STEWART, JOSEPH K., (741) STODDARD, E. M., (646) STOLZY, L. H., 1169 STONE, WILLIAM J., 659, 827 STRIDER, D. L., (424) SUDDS, R. H., (483) SWENSON, K. G., (705) SYLVESTER, E. S., (125)

TAMBURO, S. E., (396)
TARJAN, A. C., 451
TAYLOR, A. L., (261)
TAYLOR, DONALD P., 329, 664

TAYLOR, E. A., (494) TAYLOR, JACK, 654 TETER, NORMAN C., 353 THOMAS, C. A., 416, 1250 THOMAS, HAROLD E., 106, (645) THOMASON, IVAN J., 448, 580, (970) THOMPSON, HUGH E., (511) THOMPSON, JAMES P., (72), 79, (276) THORNBERRY, H. H., 371 THORNTON, ROBERT E., (131) TIMIAN, R. G., (14), 1105 TOKO, H. V., (471) TOLER, R. W., 1201 TOMPKINS, C. M., 1034, 1036, 1067 TOOLE, E. RICHARD, (806), 942, (1288) TROUTMAN, JOSEPH L., 155 TRUE, R. P., (588) TUCKER, HENRY, (741) TUITE, JOHN, 470 TULLIS, E. C., (477) TUNIS, W. D., 483

ULLSTRUP, A. J., 334 UNDERWOOD, J. F., (601), 1154, (1160)

VALDEZ, R. B., 562 Van GUNDY, S. D., 970 VANTERPOOL, T. C., 475 VARNEY, E. H., 567 VAUGHN, JOHN R., (437), (1023) VEATCH, COLLINS, (1282) VERRALL, A. F., 1288

WAGNON, H. K., (534) WALDO, G. F., (1130) WARD, C. H., (352) WATERS, E. C., (1013) WEATHERS, L. G., 528 WEBB, R. E., 144 WEBSTER, O. J., 348 WEIHING, J. L., 172, (536) WELLS, A. L., (213) WELLS, HOMER D., 834 WELLS, J. C., (903) WERNHAM, C. C., 863 WESTER, HORACE V., 519 WESTER, R. E., 184 WHITEHEAD, MARVIN D., 172, 1124, 1132 WHITLOCK, L. S., (33) WILCOXSON, ROY D., (1124), 1271 WILES, ALFRED B., 365 WILLIAMS, E. B., (413) WILLIAMS, HAROLD E., 534 WILLIAMS, N. D., (169) WILLIS, W. W., 745 WILSON, CHARLES L., 964 WILSON, JOHN H., Jr., (753) WILSON, V. E., (131), (1108) WINSTEAD, N. N., 424, 570, 909, 1280 WISMER, C. A., (253) WOLTZ, S. S., (98) WONG, PO-PING, (830) WOOD, JESSIE I., 1052 WRIGHT, W. R., (1031) WYLLIE, THOMAS D., 764, 898

YARWOOD, C. E., 125, 129, 390, 536, 841 YERKES, WILLIAM D. Jr., 500 YOUNG, H. C., Jr., 1124

ZAUMEYER, W. J., 698 ZENTMYER, GEORGE A., 1229 ZILLINSKY, F. J., (849) ZUBER, M. S., (1124), (1132) ZUCKERMAN, BERT M., 803

#### SUBJECT INDEX

Abies grandis: drought injury, 809 AC 23441, 737 ACCO, 81 Acer negundo: Septoria aceris, 1st rept. from Illinois, 498 --- pensylvanicum: Verticillium alboatrum, 1st rept. on this host (New York), 1137 Aceria tulipae, 1256, vector of wheat streak mosaic virus, 1st rept. in Idaho, 423 Acetate derivatives, 616 Acremoniella, 1015 Acremonium aranearum associated with Puccinia graminis f. sp. tritici, 173 Acrobeles spp., associated with crown blight of cantaloupe, 1073

Acrophialophora nainiana, inhibits growth

of fungi in agar, 1191

Acti-dione, 616, 1250

Acti-dione-glyodin, 395 Acti-dione PM, 494, 1176 Acti-dione-S, 552 Actispray, 539 Aegilops squarrosa: Meloidogyne incognita var. acrita, 25 Agave attenuata: Armillaria mellea, 1st rept. on this host (Calif.), 1270 Agri-mycin, 401, 549, 616 Agri-mycin 100, 81 Agri-mycin 500, 735 Agri-Strep, 81, 193, 737 Agrobacterium tumefaciens, 81, 276, 715 Agrostis scabra: Puccinia conspicua, 411 Agrox, 348 Alabama, 47, 943, 999, 1011, 1245 Albamycin sodium salt, 404 Alberta, 1266 Albinism, in Citrus, 922 Aldrin, 1133

Alfalfa (see also Medicago sativa):
anthracnose, 352, 1265; black leaf
spot, 501; black stem, 1265; brown
leaf spot, 1051; crown wart, 619;
damping-off, 1178; downy mildew,
501, 1265; effect of residue on bean
root-rot pathogens, 1027; grown in
association with oats, effect on each
crop, 1117; lack of nodulation, 1265;
leaf spots, 1265; mosaic (virus),
effect on root development of cuttings,
697; Oidiopsis taurica, 223; root rot,
1178; rust, 501; stem rot, 1265; survey of root deterioration in Oregon,
622

Alternaria sp(p.), 741, 871, 889, 930, 948, 1191

--- capsule mold and leaf spot of Ricinus communis, 827

--- cucumerina, 732

--- fasciculata, 189

--- leaf spot, of tomato, 55

--- macrospora, 1051

--- ricini, 827

--- solani, 55, 187, 202, 502, 503, evidence of existence of physiologic races of, 298

--- tenuis, 187, 188, 299, 396, 963, 1013, 1111, 1143, 1194

--- zinniae, 670

Alysicarpus vaginalis: leaf spot, 350 Amaryllis sp.: leaf spot, reduction by spraying, 1272

American Cyanamid 18133, 1097 Amino acid content, of beans, 437

Aminotriazole, 1266

Amobam, 399

Andropogon sp(p.): nematode species associated with, 229

Angiopsora zeae, 1239

Angular leaf spot, of bean, 502

Anisomycin, 494

Announcements: "Design for Abundance", color film story of plant diseases, 288; Results of 1958 fungicide tests, 595

Anthracnose, of alfalfa, 352, 1265; apple, 920; bean, 502, 1265; cantaloupe, 1265; cotton, 500; cucumber, 1265; melon, 503; rose, 1176; tobacco, 1264; tomato, 58, 719, 732; Trifolium spp., 1265; watermelon, 503, 570

--- northern, of red clover, 782

--- stem, of lima bean, 732

Antibiotic treatments, of pecan nursery tree roots for control of crown gall, 81

Antibiotics, from garlic for control of certain diseases of plants, 276; seed treatments for control of grain smuts, 616

Anticarie, 9, 880, 881

Antirrhinum majus: Cercospora antirrhini, 1st rept. on this host in United States (Florida), 511

Anuraphis persicae-niger, 992

Aphanomyces raphani, 834

Aphelenchoides spp., 42, 43, 44, 238, 331

Aphelenchus spp., 42, 43, 44, 238, associated with crown blight of canta-

loupe, 1073
--- avenae, 42, 43, 44, 323, 331

Aphis fabae, 707

--- gossypii, 1274

Apparatus, for study of mutual effects of root exudates on plants, 1117

Apple (see also Malus sylvestris): anthracnose, 1st rept. from Michigan on this host, 920; black rot, 654; Botryosphaeria rot, 654; Botrytis rot, 654; bud mutations, virus-like symptoms, 264; calyx-end rot, 804; cedar rust, 654; control of rots by treatment of field boxes, 396; diseases in Georgia, 654; frogeye leaf spot, 655; mosaic virus, 126; powdery mildew, 654, treatments for, 1263; rubbery wood virus, 1st rept. on this host in United States (New York), 157; scab, 540, fungicides for control of, 483

Apricot: gumboil disease, 106; powdery mildew (Sphaerotheca pannosa), 1st rept. on this host in Argentina, 421

Arachis hypogaea: Belonolaimus longicaudatus, 49

Aramite, 483

Arasan, 549, 1016, 1133

Arasan 15, 348

Arasan 75, 1250

Arasan S.F.M., 348

Arceuthobium americanum, 109

--- campylopodum, 594

--- f. cyanocarpum, 109

--- vaginatum f. cryptopodum, 109

Argentina, 421

Aristida oligantha: nematode species associated with, 229

--- pansa: Pythium graminicola, 871

--- purpurea: nematode species associated with, 229

Arizona, 67, 287, 309, 411, 741, 871, 966, 1019, 1038, 1073, 1250

Arkansas, 90, 172, 909, 964, 999, 1176,

Armillaria mellea, 1229, 1270; on almond, 520; peach, 520

Arthrobotrys spp., 968

--- arthrobotryoides, 968

--- conoides, 968

--- dactyloides, 968

--- oligospora, 968, 969

Ascochyta gossypii, 369, 500

--- hordei, 835

--- imperfecta, 785

--- leaf spot, of Trigonella foenumgraecum, 1051

--- sorghi, 461

--- sorghina, 336

Asparagus: rust, efficacy of systemic compounds in the control of, 552

Aspergillus spp., 188, 760, 889, 931, 1191

--- candidus, 470, 767

--- carbonarius, 1043

--- flavus, 470, 922

--- glaucus, 470, 767

--- japonicus, 1045

--- luchuensis, 1042

--- niger, 405, 1042

--- ochraceus, 470, 1045

--- phoenicis, 963

--- tamarii, 922

--- ustus, 1045

--- violaceo-fuscus, 1045

Asphalt varnish-fungicide mixtures, effect on growth in pure culture of fungi in tree decay, 955

Aureomycin, 549

--- hydrochloride, 404

Avocado: Pratylenchus vulnus, 797

Bacterial blast, of Juglans mandshurica, 272

Bacterial blight, of bean, 133, 502; cotton, 86; Juglans regia, 401; red clover, 786

--- canker, of tomato, 66

--- leaf spot, of Ricinus communis, 827

--- rot, of organ-pipe cactus, 496; saguaro, 496

--- seed-piece decay, of potato, 543

--- spot, of tomato, 193, 725, 1265

--- stripe, of Sorghum, 335

--- wilt, of bean, 27; cantaloupe, 1265; corn, 1264; cucumber, 1265

Balansia strangulans, 462

Banana: diseases in Panama, 1202

Barium oxide, 940

Barley: covered smut, seed treatment trials, 343; crown rust, 1st rept. on this host in Minnesota, 1287; effect of residue on bean root-rot pathogens, 1027; Erysiphe graminis f. hordei races in West Virginia, 1282; leaf spot (Ascochyta hordei), 1st rept. in Ohio, 835; leaf rust, 611, 780, physiologic races of, in United States, 1000; loose smut, 1122, survival of, in seed, 1287; Meloidogyne incognita var. acrita, 25; nematode species associated with, 229, 331; net blotch, 780, powdery mildew, 780, (Erysiphe graminis f. sp. hordei), strain dynamics of, 1004; scab, 1264; scald, 777, 1264; Septoria leaf blotch, 1st rept. on this host in Texas,

777; Septoria passerinii, 14; smut, 501, 616; spot blotch, 1105; stem rust, 611; stripe rust, 168; yellow dwarf virus, 849, 1264

Basal sheath and stalk rot, of Lolium multiflorum, 834

Bayer 22555, 881

Bean (see also Phaseolus): absorption and translocation of the F-17 antirust complex, 431; angular leaf spot, 502; anthracnose, 502, 1265, control by extract of garlic spray, 276; bacterial blight, 133, 502, control by extract of garlic spray, 276; bacterial wilt, 27; Belonolaimus longicaudatus 49, pathologic histology of injured roots, 983; circular leaf spot, 502; Corynebacteria, effect of thiamine and temperature upon pigmentation and growth of, 439; diseases in Panama, 1202; effect of storage of, treated with fungicides and insecticides, 213; Fusarium root rot, 437, microbial associations in, 929; halo blight, 502; mosaic (virus), 131, 133, 502, 1265, new strain in Idaho, 1108; Rhizoctonia solani, 404; root rot, 626, 1265, effect of crop residues on, 1027, effects of gibberellin and fungicides on, 1023; rust, 431, 502, associated with smog damage, 129, control by extract of garlic spray, 276; Sclerotinia sclerotiorum in Argentina, 421; sclerotiniose, 502; stem rot, 502; tobacco mosaic virus, infection reduces smog damage, 129, susceptibility increased by soaking in water, 841; tobacco necrosis virus, 390, 640; yellow bean mosaic (virus), 1221

--- broad, see Vicia faba

--- lima: downy mildew, 184; stem anthracnose, 732

Beet, sugar: curly top (virus), 126, 681; Heterodera schachtii, influence of germinating seed on emergence of larvae from cysts, 1103; Heterodera schachtii, host-parasite relationship of various plants, 1258; savoy disease (virus), 681; virus yellows, effect on seed production, 1188

Belonolaimus sp(p.), 42, 43, 44, 237

--- gracilis, 236, 983

--- longicaudatus, 47, 983, increase on plant species in artificially inoculated soil, 48, preplant and postplant applications of 1,2-dibromo-3-chloropropane for control of, 903

Bemisia inconspicua, 712

--- tabaci, 712

Bidens sp.: Belonolaimus longicaudatus,

500: soybean, 287

--- needle blight, of Pinus strobus,

Bioquin 1, 660 Biphenyl, 649 Bispora sp., 871 Black leaf spot, of alfalfa, 501 Black leg, of potato, 1265 Black patch, of red clover, 786 Black ring, of Panicum latifolium, 462 Black root rot, of cotton, 506; red globe radish, 834 Black rot, of apple, 654; sweetpotato, 1265 Black scorch, of dates, 963 Black shank, of tobacco, 755, 1264 Black spot, of rose, 1176 Black stem, of alfalfa, 1265; Delphinium ajacis, 934; red clover, 784 Blight, of pepper, 502; Tagetes erecta, Blight, southern, of peanut, 444; pepper, 444; tobacco, 444; tomato, 444 Blossom-end rot, of tomato, 193 Blueberry, see Vaccinium Blue mold, of Citrus, 649; tobacco, 1264 Blue stem, of sweetpotato, 1265 Boleodorus spp., 331 Boll rot, of cotton, 500 Book reviews: Maatalouden Sanakirja --Lantbrukets Ordbok -- Landwirtschaftliches Wörterbuch -- Agricultural Dictionary, by Liisa Mali, 1052; Plant pathology: problems and progress 1908-1958, 1213 Bordeaux mixture, 491, 539, 562, 658, 670, 754, 873 Bordeaux sprays, 77 Botryosphaeria ribis, 396, 654, 1229 Botryotinia ricini, 363, 827 Botrytis sp(p.), 363, 394, 760 --- allii, 276, 1143 --- cinerea, 187, 188, 396, 646, 654, 889 Bouteloua arenosa: rust, 500 --- aristidoides: rust, 500 --- curtipendula: nematode species associated with, 229; Puccinia vexans, 411, rust, 500 --- gracilis: rust, 500 Brachycladium spiciferum, 871 Brazil, 66, 1081, 1229 Bremia lactucae, 503 British Columbia, 115, 803, 1004, 1253 Broccoli: downy mildew, 735 Bromus spp.: head smut, 616 --- catharticus: head smut, 1268; nematode species associated with, 229 --- rubens: Fusarium acuminatum, 871 F. poae, 871; Pythium graminicola, 871 Brown leaf spot, of Medicago sativa, 1051 Brown root rot, of wheat, 175 Brown rot and cracking, of sweet cherry. Brown spot, of celery, 1079; corn, 18,

420 BSM11, 881 Buckman BSM-11, 343 Bunt, of wheat, 9, 343 Cabbage: Belonolaimus longicaudatus, 49; diseases in Panama, 1202; effect of seed treatment with streptomycin on Golden Acre seedlings, 549; Sclerotinia sclerotiorum in Argentina, 421 --- varieties and clubroot-resistant lines: reaction to root-knot nematodes, 1280 Cacao: diseases in Panama, 1202 Cachexia, on lemon varieties in California, 528 Calabacitas: cotton leak, 502 Calcium, 102, 964 --- arsenate, 960 --- carbonate, 72 --- chloride, 193 California, 72, 79, 106, 125, 129, 187, 272, 314, 378, 390, 411, 418, 448, 459, 520, 528, 558, 580, 584, 639, 645, 649, 797, 800, 830, 833, 841, 889, 893, 913, 918, 962, 968, 969, 970, 979, 989, 999, 1005, 1011, 1032, 1034, 1036, 1067, 1084, 1103, 1169, 1174, 1188, 1196, 1229, 1230, 1250, 1270 Callistemon viminalis: Armillaria mellea, 1st rept. on this host (Calif.), 1270 Calyx-end rot, of apple, 804 Camellia sasanqua: Cercospora theae, 668 Canada, 343, 475, 556 Cantaloupe: anthracnose, 1265; bacterial wilt, 1265; Belonolaimus longicauda---- tus, 49; diseases in Panama, 1202; leaf spot, 732; Meloidogyne incognita acrita control in Maryland with DBCPfertilizer mixtures, 1231; nematodes, 1265; powdery mildew, 67; root-knot nematodes, 448; scab, 1st rept. in North Carolina in the field, 424 Capsicum frutescens: Belonolaimus longicaudatus, 49 Captan, 90, 261, 284, 397, 483, 491, 496. 539, 544, 646, 660, 745, 873, 881, 889, 955, 1133, 1176, 1205, 1211 Captan 75W, 558 Captan-sticker, 395 Carbon tetrachloride, 115 Carnegiea gigantea: bacterial rot, 496; seedling rot, 1038 Carrot: Belonolaimus longicaudatus, 49; chemical dips for control of decay, 741; diseases in Panama, 1202; leaf spot, 503; Oidiopsis taurica, 223; rots, 503; Sclerotinia sclerotiorum in Argentina. Carthamus tinctorius: Fusarium infection

of roots in acid soil, 416; mosaic (virus), 501; root rot, 501; rust, 501, effect of storage time and temperature on control of, by volatile mercury compounds, 1250 rva illinoensis; crown gall, 81; scale

Carya illinoensis: crown gall, 81; scab, 487, 658

Caryopteris clandonensis: Armillaria mellea, 1st rept. on this host (Calif.),

Cassava: diseases in Panama, 1202 Cassia tomentosa: Armillaria mellea, 1st rept. on this host (Calif.), 1270

Castilleja sessiliflora: Cronartium coleosporioides, 1st rept. on this host (S. Dak.), 1227

--- sulphurea: rust, 1227

Castorbean, see Ricinus

Catalpa speciosa: Microsphaera alni var. vaccinii, 1st rept. from Illinois, 498

Catanaria anguillulae, 969 Catechol, 1211

Ceanothus thyrsiflorus: Armillaria mellea, 1st rept. in U.S. (Calif.), 1270

Celery: brown spot, effect of temperature and crop rotation on, 1079; pink rot (Sclerotinia sclerotiorum) a new host in Argentina, 421

Cenchrus echinata: nemas recovered from "pulled and treated" areas, 44

--- pauciflorus: Meloidogyne incognita var. acrita, 25

Cephalobus spp., associated with crown blight blight of cantaloupe, 1073

Cephalosporium sp., 969

--- apii, 1079

--- gramineum, 12, 13

Ceratocystis fagacearum, 588, 936, 1288

--- fimbriata f. platani, 565, 955

--- ulmi, 511, 1078, 1176, 1195

Ceratostomella paradoxa, 963

--- ulmi, 1143

Cercidiphyllum japonicum: Armillaria mellea, 1st rept. on this host (Calif.), 1270

Cercis canadensis: Armillaria mellea, 1st rept. on this host (Calif.), 1270; Pestalotia guepini, 1st rept. on this host in United States (Illinois), 498

Cercospora althaeina, 500

--- antirrhini, 511

--- carotae, 503

--- coffeicola, 875

--- leaf spot, of Ricinus communis, 827

--- ricinella, 827

--- sorghi, 336

--- theae, 668

--- zebrina, 784, 785, 1051, 1111

Cercosporella herpotrichoides, 12, 13

Cercosporina leaf spot, of Trigonella foenum-graecum, 1051

Cereals: Cephalosporium gramineum, 1st rept. in Montana, 13; Cercosporella herpotrichoides, 1st rept. in Montana, 13; ergot control, 1266; foot and root rots, 12

Ceresan 75, 1250

Ceresan 100, 343, 348

Ceresan 200, 558

Ceresan M, 180, 343, 348, 558, 617, 1250

Ceylon, 872

Chaetomonium spp., 931, 963

--- globosum, 396

Chaetoseptoria wellmanii, 502

Chayote: diseases in Panama, 1202

Chemagro C-272, 881

Chemagro D 113, 881

Chemical <u>5400</u>, 660, 755

Chemical dips, for control of decay in carrots, 741

Chemical dips, for control of nematodes on bare root nursery stock, 1095

Chenopodium album: nemas recovered from "pulled and treated" areas, 43

Cherry, Jerusalem or Christmas, see Solanum pseudo-capsicum

--- Mazzard: Pratylenchus penetrans, 1097

--- sour: ring spot (virus), influence on growth and yield, 380

--- sweet: control of brown rot and cracking, 394

Chile, 1229

Chilli: Oidiopsis taurica, 222

Chillies: fruit rot, 670

Chipcote, 348

Chipman, 881

Chipman BB-68, 343

Chloranil, 660

Chlorella ellipsoidea, 1194

Chlorine, 660

Chlorodane, 991

Chloromycetin, 404

Chloropicrin, 755, 881, 1024

Chlorosis, of Pinus echinata and P. taeda, 964; of spinach associated with Olpidium brassicae, 118

Chrysanthemum: tobacco mosaic-virus, characteristics of, 685; yellow strapleaf disease, 98

Circular leaf spot, of bean, 502

Circulifer tenellus, 681, 683

Citrullus vulgaris var. citroides: nemas recovered from "pulled and treated" areas, 43

Citrus sp(p.): Aspergillus flavus, albinism associated with, 922; blue mold, biphenyl-induced variations, 649; diseases in Panama, 1202; exocortis, probable spread in a nursery in California, 374; leaf curl (virus), 1081; nemas recovered from "pulled and treated" areas, 43; Phytophthora spp.

(Citrus) pathogenic to, survey of irrigation water, 830; Radopholus similis infected, growth responses following chemical treatments, 261; Sclerotinia sclerotiorum in Argentina, 421; spreading decline, 41, 451

--- aurantifolia: cachexia (virus) of sweet lime and Key lime plants, 1277

--- aurantium: Meloidogyne hapla, M. incognita acrita, M. javanica, 970

--- cartons: relative humidity in, as influenced by external temperature and relative humidity, 893

Citrus limon: cachexia and xyloporosis on lemon varieties in California, 528; nemas recovered from "pulled and treated" areas, 43

--- paradisi x C. reticulata; cachexia (virus), 1277

--- reticulata x C. paradisi: xyloporosis (virus), 1120

--- sinensis: Meloidogyne hapla, M. incognita acrita, M. javanica, 970

--- sinensis x Poncirus trifoliata: Meloidogyne hapla, M. incognita acrita, M. javanica, 970

--- soils, nematode-trapping fungi in California, 968

Cladosporium sp(p.), 1015, 1111, 1191

--- cladosporioides, 396

--- cucumerinum, 276, 279, 424

--- fulvum, 59, 947, 949, 1143

--- herbarum, 188, 889

Claviceps purpurea, 1143, 1266

Clematis ligusticifolia: Puccinia recondita, 411

Cleome spinosa: tobacco necrosis virus, 390

CM-19, 727

Cobalt chloride, 1019

Coccomyces hiemalis, 394

--- lutescens, 538

Cocos nucifera: diseases in Panama, 1202

COCS, 727, 1176

Coffea spp. rust, 872

--- arabica: diseases in Panama, 1202; rust, field evaluation of six stickers in combination with Parzate for the control of, 562

Coleosporium asterum, 412

--- jonesii, 412

Colladonus clitellarius, 717

--- montanus, 707

Collar rot, of tomato, 55

Colletotrichum sp(p.), 22, 948

--- capsici, 670, 732

--- destructivum, 1111

--- graminicola, 462

--- lagenarium, 503, 570

--- lilii, 745, 1274

--- lindemuthianum, 276, 279, 502

--- phomoides, 58, 187, 732

--- trifolii. 352. 1111

--- truncatum, 732

Colorado, 109, 411, 999, 1204, 1209, 1227,

Comandra umbellata: Cronartium comandrae, 418

Comfrey, see Symphytum

Coniothyrium pirinum, 498

Connecticut, 483, 648, 834

Control, of algae, mosses and fungi on greenhouse benches, pots and soil, 660; bacterial spot of tomato, 726; Belonolaimus longicaudatus, 903; black spot of roses, activity of captan when applied to soil, 1176; brown rot and cracking of sweet cherry, 395; Ditylenchus destructor in Wisconsin, 239; downy mildew of broccoli, 735; ergot in cereal crops, 1266; Fusarium wilt and root-knot nematode by chisel application of methyl bromide, 580; grey mold on strawberry, 646; impracticability of control of nematodes with ionizing radiations, 311; leaf blotch and Victoria blight of oats by seed treatment with Ceresan M, 180; leaf rust of wheat with organic nickel, 5; leaf spot of Iris with zineb, 491; Meloidogyne incognita acrita on vegetables in Maryland with DBCPfertilizer mixtures, 1231; plant diseases with antibiotics from garlic, 276; powdery mildew of cantaloupe, 67,878, roses, 494; Pythium root rot of corn by Aphelenchus avenae, 323; Rhizoctonia leaf rot of poinsettia, 1036; root knot, evaluation of methods of applying soil fumigants for, 1099, by chemical dips, 1096, of tomato in Arizona with fumigants, 309; rots of apples and peaches by treatment of field boxes, 396; scab of apple, use of McIntosh seedlings in the bioassay of candidate fungicides, 540; scab of pecan in Georgia by timing and spraying, 658, of potato, with PCNB and urea-formaldehyde, 633; Sclerotium rolfsii in Dutch Iris by soil treatments, 283; shothole of chokecherry, 536; spreading decline of citrus by "pull and treat" method, 41; tobacco mosaic virus, contact transmission, with milk, 152; vegetable diseases in Delaware, 732; waterlogged soil disease of poinsettia stock, 1034

Co-op. Liquid Mercury Concentrate, 343 Cop-O-Zinc, 70 Copper A, 727 Copper carbonate, 348 Copper-lime, 401

Copper Omadine, 737, 745

Copper sulfate, 193, 397, 660, 960 Copper-sulfur-lime, 395 Copper -zinc, 735, 737 Copper zinc plus Agri-Strep, 739 Copper-Zinc plus streptomycin, 735 Corn: bacterial wilt, 1264; Belonolaimus longicaudatus, 49; brown spot, 500. estimations of its effect on yield in Mississippi, 18; crazy top, 334; diseases in Panama, 1202; dry ear rot. 500; effect of fungicides and insecticides on germination after storage. 1132; effect of residue on bean root rot pathogens, 1027; false smut, 500; fertilizer burn, 1264; frost damage in Wisconsin, 1053; Fusarium kernel rot, 334; Gibberella zeae, comparison of techniques and sites of inoculation, 177; leaf blight, 334, 500; Meloidogyne incognita var. acrita, 25; nematodes associated with, 331; Nigrospora cob rot, 334; nutrient deficiency, 1264; Pythium root rot control by Aphelenchus avenae, 323; rust, 334, 500, 1239; seedling blight, 500, 1264; smut, 334, 500, 1264, relation of crop sequence to tassel smut, 1271; stalk rot, 334, 1264, (Diplodia maydis), ecological study of the pathogenicity of, 1124, trials in Pennsylvania, 863; stem nematode control, 903; stunt (virus), 500; tar spot in Guatemala, 673 Corrections, 118, 288, 424, 512, 595, 835,

949, 1288

Corynebacterium flaccumfaciens, 439 --- var. aurantiacum, 27, 439

--- michiganense, 66, 276

--- sepedonicum, 198, 924

Corynespora spp., 930

--- cassiicola, 504

Costa Rica, 1229

Costantinella spp., 1032

Cotinus coggygria: Gloeosporium sp., 1st rept. on this host in United States (Illinois), 498

Cotton: Alternaria macrospora, 1051; anthracnose, 500; bacterial blight resistance caused by B7 gene, influence of nitrogen source and carbohydrate change by debudding and girdling on, 86; Belonolaimus longicaudatus, 47; black root rot, 506; boll rot. 500; 2, 4-D injury, 1264; damping off, 90, 500, 508; diseases, reduction in yield caused by, 368; effect of residue on bean root-rot pathogens, 1027; effect of seed treatment with Thimet, on seedling diseases in the field, 558; Fusarium wilt, 500, 1264; leaf blight, 500; leaf spot, 500; Meloidogyne sp., control by the addition of 1,2-dibromo-3-chloropropane to irrigation water,

243; Meloidogyne sp., use of a granular nematocide applied at listing in controlling root knot, 248; Rhizoctonia solani, cultural and pathogenic variability of, 1063; Rotylenchus reniformis, 47; rust, 500; seedling blight (fertilizer injury and dry weather), 1264; seedling disease prevalence and losses in New Mexico, 1048; seedling diseases, comparison of soil fungicides for control of, 90; stem nematode control, 903; Texas root rot, 500; tobacco necrosis, 390; Verticillium albo-atrum elimination of, by composting gin wastes, 1150; Verticillium wilt, 500, 508, influence of soil temperature on, 584

--- fiber: decomposition of cellulose by Aspergillus niger, 1042 --- seedlings: calcium deficiency, 365 Cottony leak, of calabacitas, 502

Cowpea: diseases in Panama, 1202 Crataegus mollis: Coniothyrium

pirinum, 1st rept. on this host in United States (Illinois),

Crazy spot, of sorghum and Sudan grass, 336

Crazy top, of corn 334 Criconemoides sp(p.), 42, 43, 44, 237, 312,

--- sphaerocephalum, 257

--- xenoplax, 913

Crinkle, of peanut, 361

Cronartium coleosporioides, 412

--- complex in Black

Hills, 1227

--- comandrae, 412, 418

--- comptoniae, 1227

--- conigenum, 412

--- ribicola, 126

Crown gall, of Carya illinoensis, 81 Crown and root rot, of Trifolium pratense, 785. 1114

Crown and stem rot, of Trifolium spp., 1265

Crown wart, of alfalfa, 619

Cuba, 1229

Cucumber: angular leaf spot, control by extract of garlic spray, 276; anthracnose, 1265; bacterial wilt, 1265; Belonolaimus longicaudatus, 49; diseases in Panama, 1202; downy mildew, control by extract of garlic spray, 276; effect of lindane on yields when used with various fungicides, 70; effect of storage of, treated with fungicides and insecticides, 213; nematodes, 1265; peach ring spot virus susceptibility increased by soaking cotyledons in water, 843; powdery mildew, polybutenes for con-

1302 (Cucumber) trol, 878; root-knot nematodes, 448; scab, control by extract of garlic spray, 276; tobacco necrosis virus, 390 Cucurbita pepo: Belonolaimus longicaudatus, 49 Cumminsiella mirabiliasima, 412 Curvularia spp., 22, 1191 --- inaequalis, 873, 875, 1013 --- lunata, 871, 1191 --- maculans, 350 --- trifolii, 1111 Cyanamid, 1266 Cycloheximide, 67, 397 Cylindrocarpon radicicola, 745, 746 Cymadothea trifolii, 786, 1051, 1111 Cyndon dactylon: Belonolaimus longicaudatus, 49; nemas recovered from "pulled and treated" areas, 42; nematodes in Georgia turf nurseries, 237; Rhizoctonia solani, 871 Cyperus rotundus: nemas recovered from "pulled and treated" areas, 44 Cyprex, 395, 483, 538, 737, 1176 D-113, 552 Dactylaria brochopaga, 968 --- candida, 968 Dactylella spp., 968 --- ellipsospora, 968 --- gephyropage, 968 Dahlia sp.: Ditylenchus destructor, 1212 --- variabilis: Sclerotinia sclerotiorum in Argentina, 421 Dalapon, 1266 Damping-off, of alfalfa, 1178; cotton, 90, 500, 508; tomato, 503 Darluca filum, 462 Dates: black scorch, 963; Fusarium sp., 963; green shrivel, 962 Datura stramonium: bromegrass mosaic virus, possible quantitative bioassay host for, 690 Davisiella elyminia, 462 2, 4-D injury, to cotton, 1264; tomato, 1265 DBCP, 309 D-D, 33, 309, 444, 799, 913 DDD, 444 DDT, 193, 483

Deenate, 488

bacco, 1264

wet rot, 934

Delsan, 348, 549

Demeton, 1275

Deficiency diseases: calcium deficiency

Delaware, 184, 295, 543, 695, 732

of cotton seedlings, 365; mineral

Delphinium ajacis: black stem, 934; green

deficiency of lowbush blueberry, 102;

nutrient deficiency of corn, oats, to-

Dianthus caryophyllus: Fusarium stem rot, application of fungicides to mother block for control, 1204; use of dips and drenches for control, 1209 Diazinon, 483 1,2Dibromo-3-chloropropane, 243, 903, 1099 Dichlone, 566, 646, 660, 955 Didymella canker, of tomato, 59 --- lycopersici, 59 --- macrospora, 491 Die-back and root rot, of Taxus spp., 814 Dieldrin, 1133 Dieldrisan, 343 Digitaria spp.: nemas recovered from "pulled and treated" areas, 43 --- sanguinalis: nematode species associated with, 229 Dilophospora alopecuri, 1264 Dinoseb, 665 Diphania nitidalis, 70 Diplocarpon earliana, 413 --- rosae, 1176 Diplodia, 1015 --- gossypina, 500 --- maydis, 863, 1124, 1143 --- phoenicum, 963 --- zeae, 177, 334, 500 Diseases, of avocado in Latin America, 1229; castorbeans in Mississippi, 827; corn and sorghum in Indiana, 334; cotton, reduction in yield caused by, 368; crops in Virginia, 1264; Gramineae in West Virginia, 461 District of Columbia, 519 Disulfide, 755 Dithane M-22, 729, 732 Dithane  $\overline{Z-78}$ , 733, 1250 Dithizone, 115 Ditylenchus sp(p.), 42, 238, 331 --- destructor, 239, 1212 --- myceliophagus, 312 Dodder; latent virus, 126 Dorlone, 309, 787 Dorylaimidae, 238 Dorylaimus sp(p.), 42, 43, 44, associated with crown blight of cantaloupe, 1073 Dothiorella sp., on Ulmus spp., 1078 Dowfume MC-2, 33, 787 Dowfume W85, 248, 310 Dowicide B, 284 Downy mildew, of alfalfa, 501, 1265; broccoli, 735; Helianthus annuus, 422; lettuce, 503; lima bean, 184; melon, 503; onion, 502; watermelon, 503; wheat, 501 Draeculacephala crassicornis, 707 Dry ear rot, of corn, 500 Dual Combination with Anti-friction Additive, 343

Diabrotica undecimpunctata, 708

Dupont Spreader Sticker, 873 Dutch elm disease, of Ulmus spp., 511. 1195 Dutch elm disease survey, 1078 Dwarf bunt, of wheat, 9 Dynactol, 549 Dyrene, 193, 487, 539, 726, 732, 881 Dyrene-s-triazine, 487 Early blight, of potato, 502; tomato, 298, 503, 719, 1265 Ecuador, 1229 EDB, 309 E. F. 23441, 483 Eggplant: diseases in Panama, 1203; Oidiopsis taurica, 222; Verticillium albo-atrum, 821 Elgetol, 660 Elsinoë rosarum, 1176 Elymus canadensis: nematode species associated with, 229 --- cinereus: Puccinia recondita, 411 --- virginicus: nematode species associated with, 229 Empoasca filamenta, 707 Endria inimica, 707 Epicoccum spp., 1013 --- granulatum, 396 --- neglectum, 1015 --- purpurascens 498, 1015 Epidemic, of oat yellow dwarf predicted, 1052 Epidemiology, of cereal rusts in Kansas, 607; stem rust of rye, 855, wheat 601, 855 increase and spread, 1154, use of rods for spore collecting, 1160 Epiphytotic, of stripe rust of wheat in Texas, 165; wheat streak mosaic in Kansas, 1256 Eradication, of root-knot nematodes from grapevine rootings by hot water, 314 Eragrostis mexicana: Curvularia lunata, 871; Pythium ultimum, 871; Rhizoctonia solani, 871 Eremochloa ophiuroides: nematodes in Georgia turf nurseries, 237 Erica carnea: Armillaria mellea, 1strept. on this host (Calif.), 1270 Erwinia amylovora, 72, 79, 276, 715, 753 --- aroideae, 934 --- atroseptica, 547, 934 --- carnegieana, 496 --- carotovora, 276, 543, 547, 934, 1236 --- chrysanthemi, 934 --- nigrifluens, 272 Erysiphe cichoracearum, 67, 503, 878 --- graminis, 462 --- avenae, 780 --- hordei, 780, 1004, 1282 --- --- tritici, 762, 780

--- polygoni, 502, 782, 1051, 1111

Escherichia coli, 72, 1194

Ethyl alcohol, 115 Ethylene dibromide, 239, 580 Eucalyptus maculata var. citriodora: Armillaria mellea, 1st rept. on this host in U.S. (Calif.), 1270 --- rudis: Armillaria mellea, 1st rept. on this host in U.S. (Calif.), 1270 Eucephalobus spp., associated with crown blight of cantaloupe, 1073 Eu-helminthosporium species, 1184 Euonymus atropurpureus: Marssonina thomasina in Illinois, 499 Euphorbia corollata: Puccinia panici, 1st rept. from Illinois, 498 --- pulcherrima: Armillaria mellea, 1st rept. in U.S. (Calif.), 1270; Erwinia carotovora, 1st rept. on this host (Mo.), 1236; Rhizoctonia leaf rot and its control, 1036; waterlogging soil disease and its control, 1034; wilting (cause unknown), in California, 1067 Euscelidius variegatus, 707 F-17, 1250 Factors, influencing spread of oak wilt in West Virginia, 588 Fagopyrum esculentum: Rhizoctonia solani, soil naturally infested and artificially inoculated, 404 Fenugreek (see also Trigonella): Oidiopsis taurica, 225 Ferbam, 491, 496, 566, 955, 1205, 1211 Ferbam-sulfur-glyodin, 395 Ferocactus wislizenii: Fusarium oxysporum and F. solani, 1040 Ferric ammonium citrate, 821 Fertilizer burn, of corn, 1264 Festuca arizonica: Puccinia conspicua, --- octoflora: Fusarium acuminatum 871; Pythium debaryanum, 871 Field crop diseases, new records in Israel, 1051 Fireblight, of pear, 79 Flax: aster yellows (virus), 501; smut, 611 Florida, 41, 98, 193, 261, 350, 363, 451, 511, 710, 806, 818, 943, 999, 1011, 1120 Fomes densus, see F. johnsonianus --- geotropus, 806 --- johnsonianus, 1148 --- fraxineus, 955 --- officinalis, 967 --- pinicola, sporophore size, 966 Foot rot, of oats, 1264 Foot and root rots, of cereals, 12 Forage legume seed: treatment with fungicides in the South, 1016 Formaldehyde, 756, 880 Fouquieria splendens: Aecidium cannonii, Fragaria chiloensis: virus tolerance of,

```
(Fragaria) compared with the Marshall
     variety, 1130
Fraxinus sp.: white heart rot, 1148
--- americana: Puccinia peridermio-
     spora, 1st rept. from Illinois,
--- pensylvanica: Puccinia peridermio-
     spora, 1st rept. from Illinois, 498
Fremontia mexicana: Armillaria mellea,
     1st rept. on this host (Calif.), 1270
Froelichia floridana: nemas recovered
     from "pulled and treated" areas, 43
Frogeye leaf spot, of apple, 655
Fruit rot, of chillies, 670; tomato, 949
Fumazone, 248, 309
Fungi, action of essential oils on, 1143;
     associated with red and white clo-
     vers in New Hampshire, 1111, with
     white clover stolons, 22; inhibition
     of growth by Acrophialophora nainiana
     1191; rust, life cycles of, 411
Fungicidal sprays, stickers for, intropics,
     872
658 Fungicide, 727
Fungicide-asphalt mixtures, effect of, on
     growth of Ceratocystis fimbriata f.
     platani in vitro, 565
Fungicides, for bunt control of wheat,
     applied to soil, 9; effect of storage
     of vegetable seeds treated with, and
     on germination and field stand, 213;
     treatment of forage legume seed, 1016;
     treatment of soybean seed, 898
--- and other chemicals, efficient incor-
     poration of, in the root zone of culti-
     vated soils, 111
--- and insecticides, effect on germination
     of corn after storage, 1132
Fusaria, 509
Fusarium sp(p.), 22, 188, 227, 396, 500, 503,
    547, 785, 1013, 1027, 1191, 1265, on dates.
    963
--- acuminatum, 871
--- equiseti, 871
--- graminearum, 1013
--- kernel rot, of corn, 334
--- oxysporum, 188, 283, 416, 509, 581,
    622, 745, 746, 871, 931, 1038, 1067.
    1111
--- conglutinans, 1143
--- lycopersici, 60, 503, 973, 1143
--- --- niveum, 570
--- psidii, 1191
--- tracheiphilum, 580
--- -- tuberosi, 509
--- vasinfectum, 500
--- poae, 871
--- root rot, of bean, 929
--- roseum, 188, 581, 1114
--- cerealis, 12, 13, 175, 1204,
    1209
```

```
--- seed-piece decay, of potato, 543
--- solani, 544, 622, 745, 746, 1038
--- eumartii, 423
--- phaseoli, 140, 437, 626, 929,
    1023, 1027
--- stem rot, of carnation, 1204, 1209
--- vasinfectum, 369
--- wilt, of cotton, 1264; tomato, 60,
    972, 1265
Fusicladium effusum, 487, 658
Fusicoccum putrefaciens, 803
Fusidium sp., 963
G-1143, 737
Gallotox 50, 344
Georgia, 70, 81, 236, 360, 444, 578,
    654, 658, 806, 834, 960, 999, 1011,
    1099, 1274
Geotrichum candidum, 187, 188
Ghost spot, of tomato, 1265
Gibberella fujikuroi, 1143
--- zeae, 177, 334, 446, 863, 1124
Gingko biloba: Epicoccus purpurascens,
    1st rept. on this host in United States
    (Illinois), 498
Gladiolus sp.: Ditylenchus destructor, 1212
Gliocladium spp., 931
--- root rot, of bean, 626
--- roseum, 626
Gloeocercospora sorghi, 336
Gloeosporium sp., 920
--- bolleyi, 12, 13
--- cingulatum, 276
--- malicorticis, 920
Glomerella cingulata, 277
--- gossypii, 369, 500
Glume blotch, of wheat, 1264
Glyodin, 395, 397, 1205, 1211
Goodrite p.e.p.s., 562
Goodrite SDD, 871
Goodrite X75, 873
Gotholdsteineria sp., 331
Grain smuts; antibiotics as seed treat-
    ment for control of, 616
Gramineae: abnormalities and relation-
    ship to root knot nematodes, 25;
    Claviceps purpurea, 1266; diseases
    in West Virginia, 461; Fusarium,
    1265; Helminthosporium, 1265; nema-
    todes in Georgia turf nurseries, 236:
    Rhizoctonia, 1265
--- Western: root-rotting fungi isolated
    from, 871
Granville wilt, of tobacco, 1264
Grape: Alternaria rot, 889; Clado-
    sporium rot, 889; gray mold rot, 889
Grapes, in storage, reduction of decay by
    field applications of captan, 889
Grapevine rootings: eradication of root-
    knot nematodes by hot water, 314
Gray leaf spot, of tomato, 193, 732:
```

Sorghum, 336 Gray mold, of grape, 889; Ricinus communis, 827; strawberry, 646, tomato, 1265 Green shrivel, of dates, 962 Green wet rot, of Delphinium ajacis, 934 Grevillea robusta: nemas recovered from "pulled and treated" areas, 44 Griseofulvin, 616 Griseofulvin-I, 1024 Grower's program, 395 Guatemala, 673, 1229 Gumboil disease, of apricot, 106 Guthion, 483 Gymnosporangium sp., on pear, 287 --- juniperi-virginianae, 654 --- nelsonii, 412 --- speciosum, 412 Gypsum, 79

Hakea laurina: Armillaria mellea, 1st rept. on this host (Calif.), 1270 Halo blight, of bean, 502 Haptoglossa heterospora, 969 Harposporium anguillulae, 969 Hawaii, 253 Helenium hoopesii: Puccinia conspicua, 411

Helianthus annuus: downy mildew, 1st rept. on this host in Argentina, 422; Sclerotinia sclerotiorum in Argentina, 421

Helicotylenchus sp(p.), 43, 237, 331, 790 --- nannus, 227, 257, 312

Helminthosporium spp., 1013, 1265

--- avenae, 180, 780, 1184 --- culm rot, of oats, 777

--- cyclops, 462

--- dematoideum, 461

--- erythrospilum, 461

--- hadrotrichoides, 462

--- maydis, 334, 500

--- rostratum, on rice in India, 1241

--- sativum, 12, 13, 617, 780, 1191

--- sorokinianum, 227, viability and pathogenicity of stored, 1105

--- stenacrum, 461

--- teres, 780

--- turcicum, 334, 335, 500, 501

--- victoriae, 180, 780, 1184

Hemileia vastatrix, 562, 872

Hendersonia crastophila, 12

Heptachlor, 1133

Heterodera spp., 331

--- glycines, 981

--- göttingiana, 1284

--- rostochiensis, 459, 979

--- schachtii, 126, 459, 919, 1103, 1196, 1258, significance of males in reproduction of, 979

(Heterodera) trifolii, 1230 --- weissi, 1230 Hexachlorobenzene, 9, 880 Hibiscus syriacus: Armillaria mellea, 1st rept. on this host (Calif.), 1270 Hilaria rigida: Fusarium acuminatum, 871; Fusarium oxysporum, 871 Hollow stalk, of tobacco, 1264 Honduras, 1229 Hoplolaimus, 790 --- tylenchiformis, 42, 43, 44, 237, 331 Hordeum brachyantherum: Curvularia geniculata, 871; Fusarium acuminatum, 871 --- jubatum: stripe rust, 166 Hormodendron cladosporioides, 1013 Host ranges, of Lambert mottle virus in Prunus spp., 1098 Humulus lupulus: virus (latent) detected by cucumber inoculation, 594 Hyamine 2389, 1211 Hylastinus obscurus, 1114 Hypericum prolificum: Armillaria mellea, 1st rept. on this host (Calif.), 1270

Idaho, 423, 594, 626, 629, 698, 809, 999, 1108

Illinois, 323, 371, 403, 431, 498, 936, 987, 999, 1001, 1011, 1012, 1031, 1178

Impatiens sultani: Meloidogyne javanica, 664

India, 670, 872, 1191, 1241
Indiana, 25, 201, 334, 411, 413, 470, 762,
814, 1011, 1052

Indigofera hirsuta: namas recovered from "pulled and treated" areas, 43

Indiole-3-acetic acid, 754

Indonesia, 360, 872

Insecticides, effect on storage of vegetable seeds treated with, and on germination and field stand, 213

Iowa, 172, 464, 768, 872, 999, 1011, 1012 Iris (bulbous): leaf spot, 491

--- Dutch: Sclerotium rolfsii, soil treatment for control of, 283

Iron, 102, 755 Iron EDTA, 1019

Isariopsis griseola, 502

Isothan Q15, 660

Isotox-PMA, 344

Israel, 221, 1051

Java, 360

Juglans mandshurica: bacterial blast, a new bacterial disease (California) of, 272

--- regia: bacterial blast, a new bacterial disease (California) of, 272; bacterial blight, control of, in Oregon, 401; Pratylenchus vulnus, 800

Juniperus virginiana: Stagonospora pini, 1st rept. from Illinois, 498

Kabatiella caulivora, 782, 111 Kansas, 85, 159, 511, 607, 690, 745, 999, 1011, 1070, 1256 Karathane, 66, 494 Karathane WD, 1263 Kelthane, 483 Kentucky, 683, 1011 Koeleria cristata: Puccinia conspicua,

Kohlreuteria paniculata: Armillaria

mellea, 1st rept. on this host (Calif.), 1270

Laburnum anagyroides: Armillaria mellea, 1st rept. on this host (Calif.), 1270

Larix occidentalis: drought injury, 809 Late blight, of potato and tomato, see under hosts and Phytophthora infestans

Latin America, 1229 Lead arsenate, 483

Leaf blight, of corn, 334, 500; cotton, 500; Sorghum, 501; Sudan grass, 335

Leaf disease fungi, found for 1st time in Illinois, 498

Leaf mold, of tomato, 59, 947, 949

Leaf scald, of rye, 501

Leaf scorch, of strawberry, 413

Leaf spot, of alfalfa, 1265; Alysicarpus vaginalis, 350; Amaryllis sp., 1272; barley, 835; cantaloupe, 732; carrot, 503; cotton, 500; Iris (bulbous), 491; oats, 337; peanut, 1264; strawberry, 413; Trifolium spp., 1265

Leak, of strawberry, 648

Legume crops: Oidiopsis diseases in Israel, 221

Lemaireocereus thurberi, Fusarium oxysporum and F. solani, 1041

Lepidosaphes beckii, 1277

Leptodiscus terrestris, 1111

Lettuce: big vein, Olpidium brassicae associated, 118; downy mildew, 503; drought spot of cotyledons, 629; effect of applications of micro-nutrients, 1019; effect of residue on bean root-rot pathogens, 1027; Sclerotinia sclerotiorum in Argentina, 421

Leveillula taurica, 221

Life cycles, of rust fungi, 411

Ligustrum lucidum: chlorotic spot (virus), graft transmissible, 688

Lilium sp. (Croft): root rot control. evaluation of fungicides, 745

--- longiflorum: effect of soaking bulbs in Puratized Agricultural Spray or

Demeton, or in combined soaks, on aphids, black scale and yield, 1274

Lima bean, see Bean, lima

Lime rock, 79

Limonene, 649

Lindane, 70, 1133

Liquidambar styraciflua: trunk lesion, 942 Lithium carbonate, 67

Lithocarpus densiflorus: Armillaria mellea, 1st rept. on this host (Calif.),

Lolium multiflorum: basal sheath and stalk rot (Sclerotium rolfsii), 1st rept. on this host (Georgia), 834

--- multiflorum: Belonolaimus longicaudatus, 49; Curvularia lunata, 871; Fusarium acuminatum, 871; Pythium graminicola, 871; Rhizoctonia solani, 871

Longevity of plant pathogens, the halflife concept of, 125

Losses, from brown spot of corn, 18; seedling diseases in New Mexico, 1048

Louisiana, 33, 668, 688, 943, 947, 949, 1070

Lycopersicon spp.: early blight, 298

Macondray Spreader Sticker 78, 873 Macrophomina spp., 22

--- phaseoli, see Sclerotium bataticola

Macrosiphum avenae, 849

--- barri, 629

--- granarium, 473, 1052

--- pisi, 1224

--- solanifolii, 717

Macrosteles fascifrons, 707

Magnesium, 102

Magnesium EDTA, 1019

Maine, 51, 198, 201, 471, 782, 924

Malathion, 483

Maleic hydrazide, 1266

Malus hupehensis: Armillaria mellea, 1st rept. on this host (Calif.), 1270

--- sargentii: Armillaria mellea, 1st rept. on this host (Calif.), 1270

--- sylvestris var. eleyi: Armillaria mellea, 1st rept. on this host (Calif.), 1270

--- toringoides: Armillaria mellea, 1st rept. on this host (Calif.), 1270

Maneb, 70, 193, 201, 397, 487, 539, 566, 729, 955, 1176, plus streptomycin,

Manganese, 755

Manganese EDTA, 1019

Manganese sulfate, 193

Manitoba, 5, 172

Manuscript acceptance and preparation, 2 Manzate, 733, 737, 1250, plus Agri-strep. 737

```
Marigold, see Tagetes
Marmor erodens, 64
--- phaseoli, 131, 1108
--- tabaci, 65
Maryland, 144, 173, 184, 198, 261, 348,
    416, 431, 471, 477, 494, 496, 601,
    681, 682, 683, 685, 695, 712, 715,
    755, 772, 791, 806, 855, 1004,
    1042, 1070, 1091, 1148, 1154, 1160,
    1231
Massachusetts, 803
Mathieson experimental 1562, 1133
Maytenus boaria: Armillaria mellea, 1st
    rept. on this host (Calif.). 1270
Meibomia spp.: nemas recovered from
    "pulled and treated" areas, 42
Melaleuca genistifolia: Armillaria mel-
    lea, 1st rept. on this host (Calif.),
    1270
--- leucadendra, see M. genistifolia
Meloidodera floridensis, 801
Meloidogyne sp(p.), 42, 43, 44, 63, 238,
    243, 331, 369, 1059, 1095, on cot-
    ton, 248
--- arenaria, 63
--- arenaria, 909, 1280
--- --- thamesi, 312
--- hapla, 27, 63, 448, 970, 1231, 1280
--- incognita, 27, 63, 309, 318, 444,
    1099
--- --- acrita, 25, 63, 254, 312, 314, 318,
    448, 791, 909, 913, 970, 972, 1231,
--- incognita, 909, 1280
--- javanica, 63, 448, 580, 664, 909,
    970, 1051, 1280
--- javanica, 314, 459, 913
Melon: anthracnose, 503; downy mildew,
    503; powdery mildew, 503
Mer-cad, 344
Mercuric chloride, 397, 549
Mer-sol 7, 344
Mer-sol 51, 344
Metasan M, 344
Metasol M, 344
Methoxychlor, 483
Methyl bromide, 580
Mexico, 777, 1011, 1198, 1229
Michigan, 213, 270, 395, 552, 633, 920,
    991, 999, 1001, 1011
Micocera spp., 255
Mildew diseases, of vegetable and legume
    crops in Israel, 221
Minnesota, 159, 329, 764, 767, 772, 787,
    898, 922, 999, 1011, 1012, 1117,
    1124, 1191, 1271, 1287
Mississippi, 18, 152, 180, 318, 365, 420,
    504, 522, 659, 806, 827, 942, 943,
    946, 999, 1001, 1011, 1016, 1070,
Missouri, 82, 172, 999, 1011, 1070,
```

1095, 1124, 1236 Mistletoes, dwarf, see Arceuthobium Mold, of wheat, 764 Monilinia fructicola, 276, 279, 394 Monohydrate copper sulfate dusts, 77 Mononchus spp., 253, 256 Monosporium apiospermum, 1191 Montana, 12, 411, 1098 Morchella esculenta: in Cymbidium beds, 1032 Morsus suffodiens, 519 Morus alba: Mycosphaerella mori, 1st rept. from Illinois, 498 --- rubra: nemas recovered from "pulled and treated" areas, 44 Mucor sp(p.), 188, 405, 741, 931, 1111, 1191 --- hiemalis, 187, 188 Mucorales, 871 Mycosphaerella fragariae, 413 --- perseae, 1229 Mylone, 660, 881 Myrothecium verrucaria, 1143 Myzus persicae, 145, 710, 717 N-521, 284, 755 Nabac, 726 Nabac 25, 726 Nabam, 6, 193, 201, 660, 756, plus sulfate and zineb, 556 Naphthyl acetamide, 754 Nebraska, 27, 172, 348, 439, 536, 999, 1011, 1012 Nemagon, 248, 310 Nemagon EC-2, 444 Nemagon granules, 248 Nemagon S-1, 248 Nematoctonus leiosporus, 969 --- tylosporus, 969 Nematodes (see also under genera): 930, associated with barley, corn, oats, rye and wheat in Minnesota, 329; associated with crown-blight of cantaloupe in desert soils, 1073; control by irradiation impractical, 311; effect on development of root rot and yield of canning peas, 787; in Georgia turf nurseries, 236; relationship to small grains and grasses in Texas, 227; cantaloupe, 1265; cucumber, 1265; peanuts, 1264; soybean, 1264; tobacco, 1264; tomato, 1265; wheat, 1264 --- reniform and sting, in Alabama, 47 Neofabraea malicorticis, 920 Neomycin sulfate, 404 Neotylenchidae, 238, 331 Neotylenchus spp., 331 Net blotch, of barley, 780 Neurospora sp., 660 Nevada, 871 New bacterial disease, of Juglans

(New bacterial disease) mandshurica and and J. regia in California, 272

New distribution: anthracnose of apple in Michigan, 920; Ascochyta hordei on barley in Ohio, 835; Balansia strangulans on Panicum latifolium in West Virginia, 462; brown rot of soybean in New Jersey, 287; Cephalosporium gramineum on wheat in Montana, 12; Cercospora antirrhini on Antirrhinum majus in Florida, 1st rept. in United States, 511; Cercosporella herpotrichoides on wheat in Montana, 12; crazy top on sorghum and Sudan grass in Indiana, 336; Cronartium coleosporioides on Orthocarpus luteus in South Dakota, 1227; crown rust of barley in Minnesota, 1287; curly top virus of tobacco in Virginia, 155; in Maryland and North Carolina, 682; Curvularia trifolii on Trifolium pratense in New Hampshire, 1111; gray leaf spot, of sorghum in Indiana, 336; head smut of Sorghum in New Mexico, 595; Helminthosporium culm rot of oats in Texas, 777; leaf spot (Ascochyta hordei) on barley in Ohio, 835; Leptodiscus terrestris on Trifolium repens in New Hampshire, 1111; powdery mildew of oats in Texas, 777; rough spot of sorghum in Indiana, 336; rubbery wood virus of apple (New York) 1st rept. in United States, 157; Sclerotinia sclerotiorum on celery in Argentina, 421; Sclerotium bataticola on Trifolium repens in New Hampshire, 1111; Septoria leaf blotch of barley and oats in Texas, 777; sooty stripe of sorghum in Indiana, 336; stripe rust of wheat in Minnesota, 159, in New Mexico, 595; tobacco-etch of Tabasco pepper in Louisiana, 947; Uromyces nerviphilus on Trifolium repens in New Hampshire, 1111; zonate leaf spot of sorghum in Indiana, 336

New Gallotox, 344

New Hampshire, 201, 540, 1111

New hosts: Arceuthobium campylopodum f. laricis on Pinus banksiana in Idaho, 594; Armillaria mellea, unrecorded hosts, 1270; basal sheath and stalk rot (Sclerotium rolfsii) on Lolium multiflorum in Georgia, 834; bromegrass mosaic virus (Marmor graminis) of Poa pratensis in Kansas, 85; Colletotrichum capsici on Tagetes erecta (India), 670; Coniothyrium pirinum on Crataegus mollis in Illinois, 498; Cronartium coleospori-

oides on Castilleja sessiliflora (N. Dak.), 1227; Epicoccum purpurascens on Gingko biloba in Illinois, 498; Erwinia carotovora on Euphorbia pulcherrima in Missouri, 1236; Gloeosporium sp., on Cotinus coggygria in Illinois, 498; Helminthosporium rostratum on rice in India, 1241; Heterodera trifolii on Polygonum persicaria in California, 1230; Meloidodera floridensis on Pinus rigida (New Jersey), 801; Meloidogyne javanica on Solanum pseudo-capsicum in Minnesota, 664; Pestalotia guepini on Cercis canadensis in Illinois, 498; Physalis alkekengi for U. S. cotton-, Cassia-, and sweetpotato-wilt Fusaria, 509; Stemphylium sp. on Symphytum peregrinum in New York, 1050; Verticillium albo-atrum on Acer pensylvanicum (New York), 1137

New Jersey, 177, 184, 287, 567, 972, 801, 1122

New Mexico, 243, 248, 287, 506, 595, 999, 1048, 1063, 1150

New Puradrin, 344

New York, 111, 157, 184, 201, 264, 311, 352, 380, 446, 477, 616, 640, 655, 719, 735, 821, 929, 934, 999, 1011 ff., 1050, 1079, 1137, 1143, 1219

N-Dodecylguanidine fungicides, 483 Nickel carbamate, 566, 955

Nickel chloride, 5

Nickel nitrate hexahydrates, 5

Nicotiana glutinosa: effect of humidity and atmospheric pressure on tobacco mosiac virus infection of local lesions, 845

Nigrospora oryzae, 334, 396 Nitrate nitrogen, 86

Nitrogen, 102, 477

Nitrogen fertilization, decrease of soybean root nodulation, 1284

No Bunt, 881

Nodulation, lack of, in alfalfa, 1265 North Carolina, 24, 152, 283, 420, 424, 570, 682, 683, 753, 806, 903, 1001, 1011, 1280, 1284

North Dakota, 14, 169, 999, 1001, 1011, 1105

Northeastern United States, 1004 Nothotylenchus sp(p.), 43, 44, 331 Nova Scotia, 803, 804

Nuclay, 72, 77, 79

Nursery stock: chemical dips for control of nematodes, 1095

Oak wilt, see Ceratocystis fagacearum and under Quercus

Oats: barley yellow dwarf virus, 849; crown rust, 611, 777, 1010, Landhafer races in Texas and Mexico, 1198, methods used in conducting surveys of races, 464; drought lodging, 475; effects of chemical seed treatment on the control of seedling diseases, 180; Epicoccum spp., 1013, 1015; E. neglectum, 1015; E. purpurascens, 1015; Eu-helminthosporium, differentiation of pathogenic forms, 1184; foot rot, 1264; Fusarium spp., 1015; grown in association with alfalfa reduces growth of alfalfa, and alfalfa increases growth of oats, 1117; heat canker, 475; Helminthosporium culm rot, 1st rept. on this host in Texas, 777; leaf blotch and Victoria blight, 180; leaf spot (non-parasitic), 337; Meloidogyne incognita var. acrita, 25; nematodes associated with, 229, 331; nutrient deficiency, 1264; powdery mildew, 1st rept. on this host in Texas, 777; red leaf, 1264; Septoria leaf blotch, 1st rept. on this host in Texas, 777; smut, 616, seed treatment trials, 343; smut-resistant Black Mesdag, possible parent for oat species crossing, 772; stem rust, 611, inheritance of new sources of resistance, 768; yellow dwarf (virus) epidemic prediction, 1052

Oenothera nuttallii: Aecidium anograe, 411 Ohio, 55, 835, 1011

Oidiopsis taurica, 221

Oidium, on tomato, 66

Oils, action on fungi, 1143

Oklahoma, 90, 487, 999, 1070, 1124, 1288

Oligomycin, 1024, 1250

Olpidium spp., 929

--- brassicae, 118

OM 1084, 1211

OM 1456, 1205

OM 1483, 1205

OM 1564, 1205

Omadine, 660, 755

Omadine salts, 756

Omazine, 494

Onion: diseases in Panama, 1203; downy mildew, 502; Oidiopsis taurica, 223; smut control, 880

Ontario, 102, 729, 849, 878, 1004 Ophiobolus graminis, 12, 13

Opuntia engelmanii: Fusarium oxysporum and F. solani, 1040

--- fulgida: Fusarium spp., 1040

--- versicolor: Fusarium oxysporum and F. solani, 1040

Orange seedlings: growth rate in presence and absence of Phytophthora spp., at two levels of irrigation and of soil nitrogen, 1169

Oregon, 79, 137, 175, 401, 619, 622, 705, 871, 996, 999, 1130, 1247 Organ-pipe cactus, see Pachycereus

Orobanche ludoviciana, 580

Ortho LM, 344

Ortho seed guard, 348

Orthocarpus luteus: Cronartium coleosporioides, 1st rept. on this host in South Dakota, 1227

Orthocide, 348, 492

Orthocide 50W, 737

Orthocide 50W plus ML-107, 737

Orthocide 75, 1024, 1250

Orthocide 80W, 733

Orthocide 406, 646, 755, 756

Orthocide spreader-sticker, 562, 873

Orthocide sticker 1017, 562

Oryzopsis hymenoides: Fusarium acuminatum, 871; Fusarium oxysporum, 871

Ovotran, 67

Oxime derivatives, 617

Pachycereus marginatus: bacterial rot, 496 Panicum fasciculatum: nematode species associated with, 229

--- latifolium: Balansia stangulans, 1st rept. on this host from West Virginia, 462

Pano-drench 4, 1211

Panagen, 348

Panogen 15, 9, 344, 1205, 1250

Panoram, 348

Panoram D-31, 348

Papaya: diseases in Panama, 1203

Para rubber latex, 562

Paraphelenchus sp(p.), 43, 44, 238

Parathion, 193

Paratylenchus spp., 238, 331, 790

--- minutis, 258

--- projectus, 227

Parzate, 487, 554, 562, 874

Paspalum dilatatum: nematode species associated with, 229

Paulownia tomentosa: Armillaria mellea, 1st rept. on this host (Calif.), 1270

PCNB, 90, 444, 558, 633, 750, 1250

Peach: Armillaria mellea, 520; control of rots by treatment of field boxes, 396; Criconemoides xenoplax, 913; Meloidogyne incognita acrita, 913; ring spot (virus), 82; rosette mosaic virus, lack of transmission by adding chlordane to the soil, 991; yellow bud mosaic virus, nematodes associated with spread, 989

Peanut: crinkle, 361; diseases in Panama, 1203; leaf spot, 1264; nematodes, 1264; Sclerotinia sclerotiorum in Argentina, 421; southern blight, 444; stem nematode control, 903; stem rot, 1264; stem rot, non-dirting cultivation and soilsurface applications of PCNB in controlling, 750, role of dinoseb in "nondirting" control of, 665; stub-leaf, 360

--- seedlings; abnormality caused by seed

injury, 353

Pear: fireblight, streptomycin used, 79; rust, early record in Arizona, 287 Peas: effect of storage of, treated with fungicides and insecticides, 213; powdery mildew, 502; streak (new virus strain), 698; caused by combinations of viruses, 1219 --- canning: nematodes, effect on development of root rot and yield of, 787 Pecan trees (see also Carya illinoensis): Tillandsia usneoides controlled by spraying with copper sulfate and calcium arsenate, 960 "Pecky" cypress, of Taxodium distichum Pectobacterium delphinii, 934 Pellicularia rolfsii, 1031 Penetrol, 491 Penicillium spp., 188, 470, 741, 746, 760, 893, 931, 1111, 1114, 1191 --- digitatum, 653 --- italicum, 649 Pennsylvania, 418, 863, 999, 1011, 1012 Pepper: blight, 502; diseases in Panama, 1203; maneb injury to seedlings grown under glass, 729; potato virus Y, in south Florida, 710; ripe rot, 732; southern bacterial wilt, 502; southern blight, 444; tobacco mosaic virus, control of contact transmission with milk, 152; Xanthomonas vesicatoria, 1153 ---, Tabasco: tobacco-etch virus, 1st rept. on this host in Louisiana, 947 PEPS, 873 Peridermium filamentosum, 1227 --- harknessii, 1227 --- stalactiforme, 1227 Peronospora destructor, 502 --- parasitica, 276, 735 --- trifoliorum, 501 Persea americana: diseases in Latin America, 1229; mistletoe (Phoradendron sp.), 1229; powdery mildew, 1229; scab, 1229; sunblotch (virus), 1229 Peru, 1229 Pestalotia spp., 1191 --- guepini, 498 Phaltan, 491, 494, 495, 566, 732, 955, 1176, 1205 Phaltan 50W, 737, plus ML-107, 737 Phaltan-sticker, 395 Phaseolus aureus: Heterodera glycines, 981 --- coccineus: disease resistance in, tested against virus, 137, bean rust, Fusarium root rot and halo blight, 140 --- vulgaris: effect of humidity and atmospheric pressure on alfalfa mosaic virus infection of local lesions, 845 Phenyl mercury nitrate, 566, 955 Philaenus leucophthalmus, 707 Philippines, 562, 872

Pholiota adiposa, 955 Phoma black spot, of tomato, 61 --- destructiva, 61 --- herbarum, 871 --- medicaginis, 622 --- pomi, 396 --- trifolii, see Ascochyta imperfecta Phoradendron sp., 1229 Phosphorus, 102 Photography: method for mounting roots, Phycomycetous mycorrhizal fungus, 924 Phygon, 348, 1250 Phygon XL, 646 Phyllachora sp., 462 --- maydis, 673 Phymatotrichum omnivorum, 369, 500 Physalis alkekengi: new host for U.S. cotton-, Cassia-, and sweetpotato-wilt Fusaria, 509 --- floridana, 149 Physalospora obtusa, 396, 654 --- perseae, 1229 Physoderma alfalfae, 619 --- maydis, 18, 500 Phytoactin, 1024 Phytoactin L 307, 1263 Phytomicrographs, method for making, 659 Phytophthora sp(p.), 501, 830, 833, 745 --- capsici, 502 --- cinnamomi, 814, 1229 --- citrophthora, 830, 1169 --- cryptogea, 1178 --- fragariae, 270, 569, 1091 --- hibernalis, 830 --- infestans, 51, 62, 193, 202, 295, 502, 503, 924, 1174 --- megasperma, 830 --- palmivora, 1229 --- parasitica, 502, 830, 833, 1169 --- --- nicotianae, 755 --- phaseoli new race "B". 184 --- syringae, 830 Phytostreptin, 1024 Pink rot, of celery, 421 Pinus spp.: Arceuthobium spp., 109; rust, --- banksiana: Arceuthobium campylopodum f. laricis, 1st rept. on this host (Idaho), 594 --- contorta: Arceuthobium americanum, 109; Cronartium comandrae, 418; drought injury, 809; Peridermium harknessii, 1227 --- echinata: chlorosis, related to calcium content of soil, 964; Meloidodera flori-

densis possible new host record (New

--- flexilis: Arceuthobium campylopodum f.

Jersey), 801

cyanocarpum, 109

--- monticola; drought injury, 809

--- mugo: Diplodia pinea, 1st rept. in Illinois, 498

--- nigra: Diplodia pinea, 1st rept. in Illinois, 498

--- palustris: Scirrhia acicola, 420

--- ponderosa: Arceuthobium vaginatum f. cryptopodum, 109; Cronartium comandrae, 418; drought injury, 809; Fomes officinalis, 967; Fomes pinicola, 967; Polyporus anceps, 967;

--- pungens: Cronartium comandrae, 418

--- rigida: Meloidodera floridensis, 1st rept. on this host (New Jersey), 801

--- strobus: brown spot needle blight, 420

--- sylvestris: Peridermium harknessii, 1227

--- taeda: chlorosis, related to calcium content of soil, 964; Scirrhia acicola, 420

Piricularia grisea, 462

--- oryzae, 477

Pittsburgh C-272, 1024

Plant pathogens, half-life concept of longevity of, 125

Plasmopara halstedii, 422

Pleospora herbarum, 190

--- lycopersici, 190

Pleurotus ostreatus, 955

Poa pratensis: bromegrass mosaic virus, 1st rept. on this host (Kansas), 85

Podosphaera leucotricha, 654, 1263

--- tridactyla, 421

Poinciana pulcherrima: Armillaria mellea, lst rept. on this host in U. S. (California), 1270

Polygonum persicaria: Heterodera trifolii, lst rept. on this host (California), 1230

Polyporus adustus, 955

--- parganenus, 955

--- sulphureus, 955

--- tulipiferae, 955

--- versicolor, 955, 1191

Polythrincium trifolii, 1051

Poncirus trifoliata: exocortis-like symptoms, 374

Poria monticola, 955

Potassium, 102

Potato: Belonolaimus longicaudatus, 49; blackleg, 1265; Ditylenchus destructor, 1212; diseases in Panama, 1203; early blight, 202, 502; fungicides, uniform and timing experiments comparing maneb and zineb, 201; Fusarium eumartii wilt in Idaho, 423; Fusarium wilt, 509; late blight, 202, 502, 1265; late blight, relation of rainfall, relative humidity, and temperature to, 295, resistance of seedlings resistant to ring rot, 924; leaf spot (? deficiency), 947; mosaic (virus), 1265; Oidiopsis taurica, 222; punta morada (virus), 502;

rhizoctoniosis, 502; ring rot, 924 method of testing seedling progenies for resistance, 198; scab, control in Michigan, 633; Sclerotinia sclerotiorum in Argentina, 421; seed-piece decay, 543, varietal response to, 546; tuber necrosis in Idaho, 423; zinc fungicides used to demonstrate spray coverage, 115

Powdery mildew, of apple, 654, 1263; apricot, 421; avocado, 1229; barley, 780, 1004; cantaloupe, 67; cucumber, 878; melon, 503; oats, 777; peas, 502; red clover, 782; rose, 494; strawberry, 1253; Vicia faba, 1051; watermelon, 503

Pratylenchus sp(p.), 29, 42 ff., 237, 261, 331, 790, associated with crown blight of cantaloupe, 1073

--- brachyurus, 42 ff., 256, 1099

--- penetrans, 1097

--- scribneri, 43

--- vulnus, 312, 797

--- zeae, 42, 43, 44

Primula obconica: tobacco necrosis virus, 640

Prismatolaimus spp., associated with crown blight of cantaloupe, 1073

Prunus spp.: Lambert mottle (virus) host ranges and latent carriers, 1098; necrotic ring spot virus, time and temperature requirements for transmission, 993; quick index method for Kwanzansystemic virus, 534; virus, 126

--- amygdalus: Armillaria mellea, 520; yellow bud mosaic (virus), 520

--- virginiana demissa: shothole, control by Cyprex, 536

Pseudomonas andropogonis, 335

--- angulatum, 539

--- caryophylli, 27

--- lachrymans, 276, 279

--- phaseolicola, 140, 276, 279, 502

--- solanacearum, 27, 502

--- syringae, 272, 276, 786

--- tabaci, 539, 753, 946

Pseudoperonospora cubensis, 276, 279, 503 Pseudopeziza trifolii, 785, 1111

--- trifoliorum, 501

Pseudoplea trifolii, 1051, 1111

Pseudotsuga menziesii: Fomes pinicola, 966

--- glauca; drought injury, 809

Psilenchus spp., 331

Publications, relative to viral diseases of plants from 1900 to 1956, 371

Puccinia andropogonis, 412

--- asparagi, 552

--- cacabata, 500

--- canaliculata, 412

--- caricina, 412

--- carthami, 501, 1250

--- conspicua, 412

--- coronata, 126, 412, 611

```
--- avenae, 464, 777, 1010, 1012
--- secalis, 1287
--- crandallii, 412
--- dioicae, 412
--- glumarum, see P. striiformis
--- graminis, 276, 461, 462
--- --- avenae, 611, 768
--- secalis, 611, 855
--- --- tritici, 5, 173, 501, 601, 607, 855,
    1154, 1160
--- hordei, 611, 780, 1000
--- liatridis, 412
--- monoica, 412
--- poae-sudeticae, 462
--- polysora, 334, 1239
--- purpurea, 335, 501
--- pygmaea, 412
--- recondita (see also P. rubigo-vera),
    412, 501, 578, 611, 613, 777, 998
--- secalis, 611
--- recondita tritici, 607
--- redfieldiae, 412
--- rubigo-vera, see also P. recondita
--- --- secalis, 5
--- --- tritici, 606
--- sorghi, 334, 500, 1239
--- stipae, 412
--- striiformis, 159, 163, 165, 168, 169,
   172, 501, 595, 607, 777
--- vexans, 412
Pumpkin: root-knot nematodes, 448
Puratized, 660
Puratized Agricultural Spray, 539, 658,
Puerto Rico, 1229
Pullularia pullulans, 188
Puraseed, 348
Pyrax ABB, 77, 79
Pyrenochaeta sp., 323
Pyrenophora avenae, 180
Pyronema sp., 660
Pythium sp(p.), 12, 13, 500, 559, 581, 745,
    871, 1111, on tobacco, 1264
--- aphanidermatum, 502
--- arrhenomanes, 323
--- debaryanum, 90, 871
--- graminicola, 871
--- spinosum, 38
--- ultimum, 871, 929
--- vexans, 871
```

Quercus spp.: Ceratocystis fagacearum, toxicity of heartwood to, 936; oak wilt in Arkansas and Oklahoma, 1288; oak wilt, spread in West Virginia, 588 --- falcata: Actinopelte dryina, 1st rept. in

Illinois, 498 --- marilandica: Actinopelte dryina in Illinois, 499; Monochaetia desmazieri. 1st rept. from Illinois, 498

--- stellata: Gloeosporium quercinum 1st rept. from Illinois, 498

Race, new, of Phytophthora phaseoli, 184 Races (see also strains), of Alternaria, solani, evidence of existence of, 298; crown rust of oats, 1010; Erysiphe graminis f. hordei on barley, 1282; leaf rust of wheat in United States, 999, barley in United States, 1000; Puccinia coronata avenae, 464 Radish: downy mildew, control by extract of

garlic spray, 276

--- Red Globe: black root rot, 834 Radopholus oryzae, 34

--- similis, 42, 43, 44, 254, 451, 1095, cause of decline of citrus, 261; samling "pulled and treated" areas for, 41

Ramulispora sorghi, 336

RE 4334, 881

Reaction (see also resistance, susceptibility), of barley seedlings to infection with Septoria passerinii, method of evaluating, 14; Bromus catharticus varieties and strains to head smut, 1268; cabbage varieties and club-root-resistant lines to root-knot nematodes, 1280; cachexia and xyloporosis on scions of lemon selections, 530; Cucurbitaceae to root-knot nematodes, 448; rye varieties to Puccinia recondita, 578; snap-bean varieties to strains of bean-mosaic virus, 131; Solanum spp. to inoculation with potato viruses and Verticillium albo-atrum, 146; Solanum spp. hybrids to potato viruses and fungi, 148; varieties of Sudan grass, sorgo and grain sorghum to Sphacelotheca reiliana, 1084; watermelon varieties to root knot nematodes, 909

Reactions, necrotic and resistant, to the sugarcane mosaic virus, in Sorghum varieties, 522

Red leaf, of oats, 1264 Red stele, of strawberry, 270, 1091 Redfieldia flexuosa: Puccinia redfieldiae, 411 Relation, of rainfall and temperature to late blight of potato, 295; root-knot nematodes and irrigation water to the incidence and dissemination of bacterial wilt of bean, 27

Relations between nematodes, fumigation and fertilization in rice culture, 33 Residual activity, of fungicides applied to

soil for bunt of wheat control, 9

Resistance, inheritance of, of strawberry to Phytophthora fragariae, 1091; late blight, of potato seedlings resistant to ring rot, 924; potato seedling progenies to ring rot, 198; strawberry varieties to spread of Phytophthora fragariae, 270; strawberry varieties, species and selections to powdery mildew, 1253; strawberry varieties and selections to leaf spot and scorch, 413, Verticillium wilt, 567;

to sugarcane mosaic in Sorghum, 522; in watermelon to Colletotrichum lagenarium, 570

Rhabditis spp., associated with crown blight of cantaloupe, 1073

Rhamnus spp.: Puccinia coronata avenae, 1012

Rhaphiolepis indica: Armillaria mellea, 1st rept. on this host (Calif.), 1270 Rhizobium japonicum, 1284

Rhizoctonia sp(p.), 22, 369, 931, 1015, 1265

--- albida, 871

--- leaf rot, of Euphorbia pulcherrima, 1036

--- leguminicola, 786

--- mycorrhizal fungus, 924

--- solani, 90, 188, 404, 461 ff., 500, 503, 559, 580, 626, 745, 818, 871, 929, 1027, 1036, 1063, 1111, 1116

--- tuliparum, 746

Rhizoctoniosis, of potato, 502

Rhizopus sp(p.), 369, 394, 405, 503, 760, 889

--- nigricans, 396, 648, 1111

--- stolonifer, 187, 188

Rhodotorula glutinis var. rubescens, 1111 Rhopalosiphum fitchii, 471, 1052

--- maidis, 473, 849

--- padi, 849

Rhus glabra: Cercospora rhoina in Illinois, 499; Marssonina toxicodendri, 1st rept. from Illinois, 498

--- trilobata: Armillaria mellea, 1st rept. on this host (Calif.), 1270

Rhynchosporium orthosporum, 461

--- secalis, 461, 501, 777

Ribes alpinum: Marssonina ribicola, 1st rept. from Illinois, 498

Rice: blast, interrelationship of nitrogen and other factors affecting, 477; diseases in Panama, 1203; Helminthosporium rostratum, 1st rept. on this host (India), 1241; Tylenchorhynchus martini, 33

Ricinus communis: Alternaria capsule mold and leaf spot, 827; bacterial leaf spot, 827; Botrytis leaf blight, 363; castor pomace application and cropping for reduction of nematode populations, 459; Cercospora leaf spot, 827; gray mold, 827; wilt (bacterium), 827

Rimocidin, 1211

Ring rot, of potato, 198, 924; Trifolium pratense, 1051

Ripe rot, of pepper, 732

Root rot, of alfalfa, 1178; bean, 1023, 1027, 1265; Croft lilies, 745; safflower, 501

--- ---, Texas, of cotton, 500

Roots, centrifugation of, before determining moist weight, 987

Rosa spp.: anthracnose, 1176; black spot, 1176; powdery mildew, 494

Rotylenchus buxophilus, 312

--- reniformis, 47

--- robustus, 227

Rough spot, of sorghum, 336

Rubus ostryifolius: Kunkelia nitens, 1st rept. from Illinois, 498

Rust, see under various genera and hosts Rye: leaf rust, 5, 611; leaf scald, 501, nematodes associated with, 229, 331;

--- varieties: reaction to leaf rust, 578

Saccharomyces ellipsoideus, 1194

Safflower, see Carthamus

Saguaro, see Carnegiea gigantea

Sanocide, 881

Saprozoics, 44

Sassafras albidum: Gloeosporium affine in Illinois, 499

Scab, of apple, 483, 540; barley, 1264; pecan, 487, 658; Persea americana, 1229; potato, 633; wheat, 1264

Scald, of barley, 777, 1264

Scaphoideus luteolus, 1245

Scaphytopius acutus, 717

Schizophyllum commune, 955

Scirrhia acicola, 420

Sclerophthora macrospora, 334, 336

Sclerospora macrospora, 501

Sclerotinia sclerotiorum, 421, 629, 804

--- trifoliorum, 1111

Sclerotiniose, of bean, 502

Sclerotium bataticola, 580, 1111

--- rolfsii, 126, 283, 444, 665, 750, 834

Scolytus multistriatus, 1245

Scurf, of sweetpotato, 1265

Scutellonema brachyurum, 312

Seed injury, causes abnormality of peanut seedlings, 353

Seed treatment, with streptomycin, effect on Golden Acre cabbage, 549; vegetable seeds treated with fungicides and insecticides, effect of storage on germination and field stands, 213

Seed-treatment tests, of sorghum, 348 Seed-treatment trials, cooperative, 343

Seedling blight, of corn, 500, 1264; cotton, 1264; wheat, 617

Seedling rot, of Carnegiea gigantea, 1038

Semicarbazone, 1176
--- derivatives, 616

Septoria glycines, 287

--- leaf blotch, of barley, 777; of oats in Texas, 777

--- leaf spot, of tomato, 63

--- lycopersici, 63, 947

--- macropoda var. septulata, 462

--- nodorum, 780

--- passerinii, 14

--- tageticola, 670

--- tritici, 780

Sesame, see Sesamum indicum

Sesamum indicum: Alternaria macrospora, 1051; diseases in Panama, 1203; effect of residue on bean root rot pathogens, 1027

Sesbania: Effect of residue on bean root-rot pathogens, 1027

Setaria lutescens: Meloidogyne incognita var. acrita, 25

Setrete, 348 Sevin, 483

Shell Tenac, 562

Shellestol, 873

Shothole, of chokecherry, 536

Sida carpinifolia: nemas recovered from "pulled and treated" areas, 44

Siteroptes graminum, on wheat in Idaho, 423

Sitona hispidula, 622, 1114

Small grains: Acremoniella, 1015; Alternaria tenuis, 1013; Cladosporium, 1015; Curvularia inaequalis, 1013; Diplodia, 1015; diseases in Texas, 777; Epicoccum spp., 1013; Fusarium spp., 1013; Fusarium graminearum, 1013; Helminthosporium spp., 1013; Hormodendron cladosporioides, 1015; Rhizoctonia, 1015; Stemphylium, 1015; yellow dwarf (virus), a limiting factor in Washington, 471

Smilacina racemosa: Sphaeropsis cruenta, lst rept. from Illinois, 498

Smog damage, reduced by virus infection and heating, 129

Smut, see under various genera and hosts

Smut-B-Gon, 344

Smut Go, 881

Sodium hypochlorite, 741

--- orthophenylphenate, 649

Soil disinfestants: laboratory method for testing effectiveness, 1174

Soil rot, of tomato, 818

Solanum spp. and species hybrids: preliminary evaluation for resistance to disease, 144, reaction to certain potato viruses and fungi, 146 ff.

--- pseudo-capsicum: Meloidogyne javanica, 1st rept. on this host (Minnesota), 664

--- sarrachoides: Heterodera schachtii, 1196 Sooty blotch, of red clover, 786; Trifolium

resupinatum, 1051 Sooty mold, of wheat, 1264

Sooty stripe, of sorghum, 336

Soreshin, of tobacco, 1264

Sorghum sp(p.): bacterial stripe, 335; crazy top, 1st rept. on this host in Indiana, 336; diseases in Panama, 1203; effect of residue on bean root-rot pathogens, 1027; gray leaf spot, 1st rept. in Indiana, 336; head smut, 335, 1084, 1st rept. on this host in New Mexico, 595; leaf blight, 501; rough spot, 1st rept. in Indiana, 336; rust, 335, 501; smut, 348, 501; sooty stripe,

1st rept. in Indiana, 336; sugarcane mosaic virus, 522; zonate leaf spot, 1st rept. in Indiana, 336

--- halepense: nematode species associated with, 229; rust, 335

--- sudanense: crazy top, 1st rept. on this host in Indiana, 336; head smut, 1084; leaf blight, 335; rust, 335

--- vulgare var. sudanense: effect of residue on bean root-rot pathogens, 1027

South Carolina, 22, 509, 999, 1011, 1122, 1184

South Dakota, 133, 168, 477, 697, 845, 999, 1011, 1012, 1227

Southern bacterial wilt, of pepper, 502
Soybean: Belonolaimus longicaudatus, 49;
brown spot, 1st rept. on this host in
New Jersey, 287; effect of residue on
bean root-rot pathogens, 1027; field
inoculation with bacteria simplified, 946;
fungicidal treatment of seed in Minnesota, 898; Heterodera glycines, response of, to nitrogen fertilization,
1284; mosaic (virus), 1264; nematodes,
1264; stem nematode control, 903; stem
rot, 1264; target spot, effect on yield,
504; wildfire, 946

Spergon, 348, 737, 1016, 1250

Spergon SL, 737

Sphaceloma perseae, 1229

Sphacelotheca occidentalis, 461

--- reiliana, 335, 500, 501, 595, 1084

--- sorghi, 348

Sphaerotheca macularis, 1253

--- pannosa, 421, 494, 878

Spinach: chlorosis, Olpidium brassicae associated, 118

Spot blotch, of barley, 1105

Spreading decline, of Citrus, 451

Squash: ring spot of stone fruits, natural spread from infected to healthy squash, 705; root-knot nematodes, 448

---, summer: Meloidogyne incognita incognita, soil fumigants for control, 1100

Stagonospora bromi, 461

--- curtisii, 1272

--- foliicola, 462

--- meliloti, 1111

Stalk rot, of corn, 334, 863, 1124, 1264

Staphylococcus aureus, 1194

Stauffer, 881

Stem rot, of alfalfa, 1265; bean, 502; peanut, 665, 750, 1264; soybean, 1264
Stemphylium sp., 580, 1015; on Symphytum

peregrinum in New York, 1050

--- blight, of tomato, 63

--- botryosum, 187, 188, 784, 1050

--- consortiale, 188

--- sarcinaeforme, 784, 1051, 1111

--- solani, 63, 193, 732

--- trifolii, 1111

Stenotaphrum secundatum: Ditylenchus destructor, 1212; nematodes in Georgia turf nurseries, 237

Stereum sp., on Taxodium distichum, 806 --- purpureum, 955

Stone fruits: brown rot, control by extract of garlic spray, 276

Storage molds, of wheat, 470

Strain(s) (see also races), of Erysiphe graminis tritici attacking Arosan wheat, 762, of Xanthomonas vesicatoria differing in virulence on tomato and pepper, 1153

Strain(s) new, of bean mosaic in Idaho, 1108, of powdery mildew of barley in British Columbia, Ontario and Northeastern United States, 1004

Strawberry (see also Fragaria): aster yellows virus, in nursery beds, 645; field resistance of varieties and selections to Verticillium wilt, 567; grey mold, control of, 646; leaf scorch, 413; leaf spot, 413; leak, 648; mild mottle virus, spread in nursery stocks, 695; red stele root rot, 270, 1091; Verticillium wilt, 567; witches' broom (virus) in Oregon, 996

--- varieties: effect of virus complexes on responses of, 385

--- and new selected seedlings: improved method for testing tolerance of, to virus infection, 1247

--- --, species, selections and seedlings: powdery mildew, resistance to, 1253

Streptomyces sp., 760

--- cinnamomeus f. azacoluta, 431

--- scabies, 145, 633

Streptomycin, 72, 193, 544, 726

--- nitrate, 753

--- stability of dust formulations, 79

--- sulfate, 72, 404, 753

Stub-leaf, of peanut, 360

Stylopaga hadra, 969

Sugarcane: diseases in Panama, 1203; nemtodes associated with varietal yield decline of, in Hawaii, 253

Sulfur, 79, 102, 1263

Sulfur-glyodin, 395

Survey, of cotton seedling disease prevalence and losses in New Mexico, 1048; fungi associated with white clover stolons, 22; irrigation water for the presence of Phytophthora spp., 830; plant diseases in Panama, 1201; root deterioration of alfalfa in Oregon, 622

Survey, aerial, for Dutch elm disease, 1078
Susceptibility (see also reaction and resistance), of alfalfa varieties to Physoderma alfalfae, 619; bean varieties to tobacco necrosis virus, 640; crop plants and weeds to Heterodera schachtii, 1258;
Mung bean varieties to Heterodera

glycines, 981; pea varieties to Idaho pea streak virus, 700; to peach ring spot virus of cucumber increased by soaking cotyledons in water, 843; potato varieties to seed-piece decay, 546; of red clover varieties to diseases in Wisconsin, 782; strawberry seedlings to viruses, 1247; to tobacco mosaic virus of bean leaves increased when soaked in water, 841; of tomato to Fusarium wilt, effect of Meloidogyne incognita acrita on the, 972

Sweetpotato: black rot, 1265; bluestem, 1265; feathery mottle (virus), whitefly in Maryland, 712; internal cork (virus), 1070; scurf, 1265

Symphytum peregrinum: Stemphylium sp., 1st rept. on this host (New York), 1050 Synergism, delayed, of bacterial blight and bean mosaic of Phaseolus vulgaris, 133

Tagetes erecta: blight, new host (India),
670
Talc, 544
Tar spot, of corn, 673
Target spot, of soybean, 504
Tartaric acid, 936
Taxodium distichum: "pecky" cypress, 806
Taxus spp.: die-back and root rot, 814
TBCS, 726
TCNA, 881

Technique, for assessing leaf coverage with zinc fungicides, 115; for determining the fungicidal value of treatments against Phytophthora spp., 833; for mounting roots to be photographed, 403

Techniques: electric auger for nematological soil sampling in orchards, 918; for making rapid photomicrographs, 659; pressure injection of chemicals for action against nematodes infecting citrus, 451

Telone, 309, 787

Tenac, 873

Tennessee, 981, 1059

Tennessee tribasic copper sulfate, 193

Terraclor, 9, 745, 881

Terramycin, 81, 549

Terramycin hydrochloride, 404

Tetranychus telarius, 878

Tetylenchus sp., 331

Texas, 86, 165, 227, 411, 777, 943, 999,

1011, 1070, 1198

Thea sinensis: Cercospora theae, 668

Thiamine, 439

Thielavia spp., 930

Thielaviopsis, 871

--- basicola, 506, 929, 931, 1027

Thimet, 745

Thimet 44D, 558

Thiram, 90, 494, 566, 646, 881, 898, 955 Thylate, 395, 646

Tillandsia usneoides: control by spraying dormant pecan trees with copper sulfate and calcium arsenate, 960

Tilletia caries, 9, 343, 501

--- contraversa, 9 --- foetida, 343, 616

Tobacco (see also Nicotiana): anthracnose, 1264; blackshank, 1264, chemical soil drenches for control, phytotoxic effects on, and toxicity to other soil flora, 755; blue mold, 1264; curly top (virus) 1st rept. in Maryland and North Carolina, 682, in Virginia, 155; diseases in Panama, 1203; granville wilt, 1264; hollow stalk, 1264; lightning injury, 1264; mosaic virus, 65, 126, control of contact transmission with milk, 152; necrosis virus, 126; nematodes, 1264; nutrient deficiency, 1264; Pythium sp., 1264; soreshin, 1264; southern blight, 444; sun scald, 1264; virus infections, 1264; wildfire, 753

Tomato (see also Lycopersicon): Alternaria leaf spot, 55; anthracnose, 58, 732, control in relation to gallonage and fungicide applicators, 719; bacterial canker, 66; bacterial spot, 193, 1265, evaluation of spray materials for control of, 725; blossom-end rot, 193; collar rot, 55; 2, 4-D injury, 1265; damping-off, 503; Didymella canker, 59; diseases in Panama, 1203; early blight, 503, 1265, control by extract of garlic spray, 276, control in relation to gallonage and fungicide applicators, 719; effect of residue on bean root-rot pathogens, 1027; frost resistance, 60; fruit rots, 187, 949; fungi and rots in canning tomatoes, 187; fungicide testing on the west coast of Florida, 193; Fusarium wilt, 60, 503, 1265, effect of Meloidogyne incognita acrita on susceptibility, 972; ghost spot, 1265; Gibberella fruit rot. 446; gray leaf spot, 193, 732; gray mold, 1265; Heterodera schachtii, susceptibility to, 1196; late blight, 62, 193. 503, 1265; leaf mold, 59, 947, 949; maneb injury to seedlings grown under glass, 729; Meloidogyne spp., 62, 309; M. incognita acrita control in Maryland with DBCP-fertilizer mixtures, 1231; M. incognita incognita, soil fumigants for control, 1100; mosaic (virus), 62, 1265; nematodes, 1265, effect on nutrient status of, 791; Oidiopsis taurica. 222; Oidium, 66; Phoma black spot, 61; potato virus Y, in south Florida, 710;

root knot, effect of addition of organic amendments to soil on, 1059; Sclerotinia sclerotiorum in Argentina, 421; screening wild species for disease resistance, 55; Septoria leaf spot, 63, 947; soil rot, as influenced by former pasture crops, 818; southern blight, effect of soil fumigation on prevalence of, 444; spotted wilt virus, 126; Stemphylium blight, 63; tobacco etch (Marmor erodens), 64; tobacco mosaic virus, control of contact transmission with milk, 152; Verticillium albo-atrum, 65, 821; Xanthomonas vesicatoria, 1153

Toxicity, of oak heartwood to Ceratocystis fagacearum due to tartaric acid, 936

Toxoptera graminum, 1052

Treatment, of boxes for control of rots of apples and peaches, 396; forage legume seed with fungicides in the South, 1016

Trialeurodes abutilonea, 712

Triasan, 344

Tribasic copper, 70, 444

Tribasic copper sulfate, 491, 733

Trichoderma sp(p.), 22, 660, 760, 931

--- viride, 405

Trichodorus sp(p.), 44, 237, 331, 790, associated with crown blight of cantaloupe, 1073

--- christiei, 257, 312, 791

--- porosus, 257

Trichothecium roseum, 396

Tridens albescens: nematode species associated with, 229

--- pulchellus: Curvularia lunata, 871; Fusarium acuminatum, 871

Trifolium spp.: anthracnose, 1265; crown and stem rot, 1265; leaf spot, 1265; virus diseases, 1265

--- alexandrinum: Meloidogyne javanica, 1051

--- pratense: bacterial blight, 786; blackpatch, 786; blackstem, 784; sooty blotch, 786; Cercospora leaf spot, 784; C. zebrina, 1111; Colletotrichum destructivum, 1111; C. trifolii, 1111; crown and root rot, 785; crown and root rot, root feeding insects associated, 1114; Curvularia trifolii, (New Hampshire) 1st rept. from New England, 1111; Cymadothea trifolii, 1111; Erysiphe polygoni, 1111; Fusarium oxysporum, 1111; Kabatiella caulivora, 1111; Meloidogyne javanica, 1051; northern anthracnose, 782; powdery mildew, 782; Pseudopeziza leaf spot, 785; Pseudopeziza trifolii, 1111; Pseudoplea trifolii. 1111; Rhizoctonia solani, 1111; Rhodotorula glutinis var. rubescens, 1111; ring spot, 1051; root knot nematodes, selection for resistance. 318; rust, 784; Sclerotinia trifoliorum, 1111; Stagonospora meliloti. 1111; Stemphylium leaf spot, 784; Stemphylium sarcinaeforme, 1111; Uromyces trifolii var. fallens, 1111: vein mosaic (virus), 1219; virus diseases, 785

Trifolium repens: Alternaria tenuis, 1111; Cercospora zebrina, 1111; Cladosporium sp., 1111; Curvularia trifolii, 1111; Cymadothea trifolii, 1111; Erysiphe polygoni, 1111; fungi associated with stolons, 22; Fusarium oxysporum, 1111; Leptodiscus terrestris (New Hampshire), 1st rept. from New England, 1111; Mucor spp., 1111; Penicillium spp., 1111; Pseudopeziza trifolii, 1111; Pseudoplea trifolii, 1111; Pythium sp., 1111; Rhizoctonia solani, 1111; Rhizopus nigricans, 1111; Rhodotorula glutinis var. rubescens, 1111; root knot nematodes, selection for resistance, 318; Sclerotinia trifoliorum, 1111; Sclerotium bataticola (New Hampshire), 1st rept. from New England, 1111; Stagonospora meliloti, 1111; Stemphylium trifolii, 1111; Uromyces nerviphilus. (New Hampshire), 1st rept. from New England, 1111; Uromyces trifolii var. trifolii-repentis, 1111

--- resupinatum: leaf sooty blotch, 1051 Trigonella foenum graecum: Ascochyta leaf spot, 1051; Cercosporina leaf

spot, 1051 Trinidad, 1229

Triton B-1956, 562, 873

Trophurus sp., 331

Trunk lesion, of sweetgum, 942

Tween 20, 753

Twist disease, of wheat, 1264

Tylenchinae, 44

Tylenchorhynchus sp(p.), 237, 332, 790, associated with crown blight of cantaloupe, 1073

--- acutus, 227

--- brevidens, 227

--- claytoni, 312

--- martini, 33

Tylenchus sp(p.), 43, 44, 237, 332

--- brachyurus, see Pratylenchus brachyurus

--- semipenetrans, 43, 968

--- spiralis, see Helicotylenchus spiralis

Ulex europaeus: Armillaria mellea, 1270, 1st rept. on this host (Calif.), 1270 Ulmus spp.: chemical injury, 1078; Dothiorella sp., 1078; Dutch elm disease, 511, 1078, moisture chamber technique for culturing elm specimens, 1195; Verticillium sp., 1078 --- alata: phloem necrosis (virus), 1245; Uncinula macrospora in Illinois, 499 --- americana: elm scorch (graft transmissible virus), 519; Septogloeum profusum in Illinois, 499 Urea-formaldehyde, 633, 1025 Uredinopsis pteridis, 412 Urena lobata: nemas recovered from "pulled and treated" areas, 42 Urocystis agropyri, 881 --- cepulae, 880 --- colchici, 880 --- tritici, 126, 1051 Uromyces nerviphilus, 1111 --- phaseoli, 129, 276, 502 --- var. typica, 140, 431 --- striatus var. medicaginis, 501 --- trifolii, 784 --- fallens, 1111 --- trifolii-repentis, 1111 Ustilaginoidea virens, 500 Ustilago spp., 501 --- avenae, 343, 616, 1143 --- bullata, 617, 1268 --- hordei, 343 --- kolleri, 343, 616 --- maydis, 334, 500, 1271 --- nigra, 616 --- nuda, 616, 1122, 1287 --- tritici, 780

Vaccinium angustifolium var. laevifolium: mineral deficiency, 102 --- corymbosum: Fusicoccum canker, 803; Meloidodera floridensis, 801

--- vacillans: Meloidodera floridensis, 801

Vancide, 348

Vancide 51 ZW, 1016

Vapam, 284, 444

Vapam-4S, 1025

Vasates dubius, on fescue, 423

--- mckenzeiei, on Agropyron repens, 423 Vegetable crops: effects of storage of seeds treated with fungicides and

insecticides on germination and field stands, 213; Oidiopsis disease in Israel, 221

Venturia inaequalis, 483, 540

Vermont, 295

Verticillium sp., on Ulmus spp., 1078

(Verticillium) albo-atrum, 65, 144, 188, 369, 500, 508, 567, 584, 821, 1137, 1143, 1150, 1229

Vicia faba: powdery mildew, 1051; Sclerotinia sclerotiorum in Argentina, 421

Vinca rosea: Saprozoics, 44

Virginia, 155, 353, 360, 655, 665, 683, 750, 999, 1001, 1011, 1264

Virus diseases: bean and tobacco, effect of humidity and atmospheric pressure on virus infection of local lesions, 845; effect of virus complexes on responses of strawberry varieties, 385; evolution of viruses in roots, 538; Phaseolus coccineus, tests for resistance, 138; publications from 1900 to 1956, 371; quick test for Kwanzan-systemic virus in California, 534; of red clover, 785; Trifolium spp., 1265; virus infections of tobacco, 1264; virus tolerance of Fragaria chiloensis, 1130

--- : aster yellows of flax, 501, of strawberry in nursery beds, 645

--- --: barley yellow dwarf of cereals in Ontario, 849

--- : cachexia of Orlando tangelo, sweet and Key lime plants 1277

--- --: chlorotic spot of Ligustrum lucidum, 688

--- --: curly top of sugar beet, 681, tobacco, 155, 682

--- --: elm scorch of Ulmus americana 519

--- : feathery mottle of sweetpotato,

--- : internal cork of sweetpotato, 1070

--- --: Lambert mottle of Prunus spp., 1098

--- --: latent virus detected by cucumber inoculation, 594

--- : leaf curl of Citrus, 1081

--- --: mild mottle of strawberry in nursery stocks, 695

Virus diseases (mosaics): mosaic of alfalfa, 697, bean, 133, 502, 1108, 1265, Carthamus tinctorius, 501, potato. 1265, soybean, 1264, tomato, 62, 65,

--- --: bromegrass mosaic of Datura stramonium, 690; Poa pratensis, 85

--- rosette mosaic of peach, 991

--- --: streak mosaic of wheat, 1256

--- : sugarcane mosaic of Sorghum, 552

--- --: tobacco mosaic of bean, 129; tobacco, 152

--- --: tobacco mosaic-virus, characteristics of, of Chrysanthemum, 685

--- --: vein mosaic of red clover, 1219

--- : yellow bean mosaic, 1221

--- --: yellow bud mosaic of peach, 989; Prunus amygdalus, 520

Virus diseases: necrotic ring spot of Prunus spp., 993

--- : phloem necrosis on Ulmus alata, 1245

--- --: Pierce's disease of grape, possible cause of elm scorch of American elm, 519

--- : potato virus Y of pepper and tomato in South Florida, 710

--- : punta morada of potato, 502

--- : ring spot of peach, 82; sour cherry, 385; of stone fruits, natural spread from infected to healthy squash, 705

--- rubbery wood of apple, 157

---: savoy disease of sugar beet, 681

--- : streak of peas, 698, 1219, 1224

--- : stunt of corn, 500

--- : sunblotch of avocado, 1229

--- : tobacco-etch of Tabasco pepper, 947; tomato, 64

--- : tobacco necrosis virus of bean, 390, 640; Cleome spinosa, cotton and cucumber, 390; Primula obconica, 640

--- --: witches' broom of strawberry in Oregon, 996

--- : xyloporosis in Florida tangelo seedlings, 1120

--- --: yellow dwarf of oats, 1052; small grains, 471

--- --: yellows of sugar beet, 1188

Virus-like symptoms, of apple fruit abnormalities, 264

Viruses and bacteria: microscopic openings in vector transmission of, importance of, 715

Vitis riparia: Phyllosticta viticola, 1st rept. from Illinois, 498

Washington, 9, 133, 172, 471, 491, 594, 809, 871, 880, 993, 999

Waterlogged soil disease, of Euphorbia pulcherrima, 1034

Watermelon: anthracnose, 503, 570; diseases in Panama, 1203; downy mildew, 503; Pellicularia rolfsii, 1031; powdery mildew, 503; root-knot nematodes, 448, 909

Weather 1958: Nov., 119; Dec., 289; Jan., 425; Feb. 513; March, 596; April, 674; May, 836; June, 950

Weather: in relation to late blight in Maine, 51; relation of rainfall and temperature to late blight of potato, 295

Weather injuries: drought injury to Abies grandis, Larix occidentalis, Pinus contorta, P. monticola, P. ponderosa, and Pseudotsuga menziesii var. glauca, 809; drought lodging of oats. 475; drought spot of lettuce cotyledons,

629; frost damage to corn, 1053; frost resistance in tomato, 60; heat canker of oats, 475; lightning injury to tobacco, 1264; sun scald of tobacco, 1264 West Virginia, 396, 461, 588, 835, 1282 Wheat: barley yellow dwarf virus, 849;

"brown root rot", 175; bunt, 9, 501, seed treatment trials, 343; Cephalosporium stripe disease, 1st rept. on this host in Montana, 12; Cercosporella herpotrichoides, 1st rept. on this host in Montana, 12; downy mildew, 501; dwarf bunt, 9; flag smut, controlled by hexachlorobenzene, 881; Fusarium root rot, effect of plowing methods and dates of fertilizer application on incidence of, 175; glume blotch, 1264; leaf rust, 5, 501, 606, 607, 777, 1264, physiologic races of, in United States, 998; leaf rust race identification and nomenclature, modification of system of, 613; leaf rust research workers, committee of, 613; Meloidogyne incognita var. acrita, 25; mold, effect of moisture and temperature upon mold growth and germination of stored wheat, 764; nematodes, 229, 331, 1264; rust, effect of amount of water used in application on fungicidal efficiency of a rust control chemical, 556; scab, 1264; seedling blight, 617; smut, 616, 780, 1051; sooty mold, 1264; stem rust, 5, 501, 607, 1154, 1160, 1264, epidemiology of, 601, 885; storage molds, low incidence of, 470; streak mosaic (virus), 1256; stripe rust, 159, 172, 501, 607, in Kansas, 159, South Dakota, 168, Texas, 165, 777, Wyoming, 163, 1st rept. on this host in Minnesota, 159, New Mexico, 595. North Dakota, 169; twist disease,

---, Arosan: strain of Erysiphe graminis f. sp. tritici attacking, 762

1264

White heart rot, of Fraxinus sp., 1148
Wildfire, of soybean, 946; tobacco, 753
Wilt, of Euphorbia pulcherrima, 1067;
Ricinus communis, 827
Winter melon: root-knot nematodes, 448
Wisconsin, 144, 239, 337, 683, 782, 983,
999, 1001, 1011, 1012, 1053, 1078,
1195, 1212, 1239
WO 4778, 1211
Wyoming, 163, 411, 418, 437, 999, 1023

Xanthomonas juglandis, 272, 276, 401

--- malvacearum, 86, 369

--- phaseoli, 29, 133, 502 --- var. sojense, 946

--- ricinicala 827

--- ricinicola, 827

--- solanacearum, 829

--- vesicatoria, 193, 276, 725 Xiphinema sp(p.), 257, 790

--- americanum, 227, 237, 332, 989

--- chambersi, 332

--- diversicaudatum, 312

Xyloporosis, on lemon varieties in California, 528

Yam (Dioscorea alata): diseases in Panama, 1203

Yellow dwarf, of barley, 1264 Yellow strapleaf disease, of Chrysanthemum, 98

Zerlate, 487
Zinc, 755
Zinc EDTA, 1019
Zinc fungicides, 115
Zinc Omadine, 737
Zinc sulfate, 6, 115, 193, 1019
Zineb, 5, 70, 90, 115, 193, 201, 284, 397, 487, 491, 538, 552, 566, 658, 670, 873, 955, 1019
Ziram, 70, 658

Zonate leaf spot, of Sorghum spp., 336 Zoysia spp.: nematodes in Georgia turf

nurseries, 237

#### ERRATA

On pages 42, 43, 44, Table 2, read Pratylenchus zeae instead of Pratylenchus zea.
On page 49, 4th line from the bottom read Lolium multiflorum instead of Lolium multiflourm.
On page 229, 14th line from top, read Bouteloua hirsuta Lag. instead of Boutelua hirsuta Lag.
On page 272, 1st line of Abstract and throughout the article read Juglans mandshurica, instead of Juglans mandchurica.

On page 309, under Materials and Methods last line in 2nd paragrah read "Fumazone" instead of "Fumizone".

On page 446, Figure 2, read Tomato fruit, instead of Tomato fr.

On page 502, 7th paragrah under BEANS, read Sclerotiniose -- instead of Sclerotinose --. On page 580, last line in summary read Stemphylium sp., instead of Stemphyllium sp.;

also in Table 3, page 582 read Stemphylium sp.

On page 780, 1st paragrah read P. hordei instead of P. hordeii.

On page 1137, last paragraph, 2nd line read Acer pensylvanicum instead of Acer pennsylvanicum.